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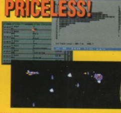
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AMIGA CONTENTS

28 CD EXPLOSION

Are CD-ROM drives true multimedia engines or just media hype? How many different standards are there? Which system is best anyway?

For once there should be more answers than questions as CU boldy steps into the maelstrom of the fastest growing area of computing. With the growing number of CD formats and players vying for position in what could become the most important sector of the home entertainment market, we lift the veils and attempt to get behind the marketing concepts, separating fact from fantasy and letting you know exactly what is and isn't possible.

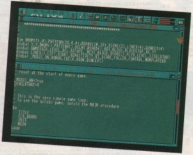
As well as investigating the promises of the CDTV we will be taking a look at the wide range of CD capable machines around. Accompanying these insights into the lives of these players will be a number of short reviews of the titles currently available for them – both entertainment and educational. Although these lists are by no means exhaustive they are no less useful for that.

If you want to know what the future of computing holds, turn to page 28.

SPECIALS

20 AMOS PRO

In an exclusive review, CU Amiga bench tests *AMOS Professional*, the most eagerly-awaited programming language since, erm, *AMOS*. Tony Dillon takes a look at all the new features and commands that have been included in what is widely regarded as one of the premier software tools written for the Amiga. With more than 750 commands now at the user's disposal, *AMOS Pro* looks likely to be the most talked about program this year. Turn to page 20 for a full review.



```
' reset at the start of every game.

MUSIC_ON=True
LEVELSTART=4

' This is the very simple game loop.
' To see the actual game, unfold the MAIN procedure
Do
   TITLE
   CLR_BOARD
   INIT
   MAIN
Loop
```

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OFF THE CUFF

EDITORIAL

Dan Slingsby – Editor

As the finishing touches were being put to this issue of CU Amiga, news reached us from the World of Commodore Show in Pasedena that the new A4000 wonder-machine has just been released. Unfortunately, we haven't got a picture of this new machine as yet (an apologetic Commodore US press office hadn't bothered to take any!!), but we do have the official technical specifications which we've reproduced in full on page seven. I'm sure you'll agree that this new machine represents an impressive step forward by Commodore and I'm already salivating at the mouth in anticipation of getting a model in for review. Quite why no prior announcement of the launch was made by Commodore will have to remain a mystery. It's rather annoying, though, as we could have had a representative at the show (i.e. me) to cover the launch (and drink copious amounts of alcohol at someone else's expense).

Speaking of holidays, I haven't had one this year, mainly due to unexpected staff departures, illnesses and the like. Indeed, there's only been two of us putting this issue to bed, which has been a nightmare to produce. In fact, I think I'm due a pay rise for all the hard work I've put in over the last few months – what do you think? If you agree, please write in to Garry Williams, telling him to give me as big a rise as possible. The writer of the best letter will win a crate of Budweiser courtesy of my bank balance.

But anyway, I musn't bore you with details of my impoverished existence any longer, as we've got a packed issue this month what with exclusive reviews of AMOS Pro, the new GVP A530 Turbo hard drive and a work-in-progress on Street Fighter 2. What's more, our lead feature heralds the start of a regular monthly review column dedicated to the very best in CD-based entertainment. We spoil you, we really do!

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GET SERIOUS

EVIEWS . PRODUCTIVITY REVIEWS . PRODUCTIV

What a month. Amiga software and hardware just keeps on getting better. This month sees reviews of the new GVP A530 Turbo hard drive, an in-depth look at *AMOS Professional*, and a testing of Hewlett Packard's new 24-bit printer. Also on show, are reviews of *Neuro Pro, Image Master*, SSL's A5000 and exclusive news on the A4000. Can't say fairer than that, can we?!

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GVP A530, page 108.

SCREEN SCENE

AME REVIEWS . GAME REVIEWS . GAME REVIE

Streetfighter 2 gets Screen Scene off to a high-kicking start as we exclusively preview the Amiga conversion of the hit Capcom coin-op. Also on show are sneak previews of Virgin's *KGB*, the Bitmaps' *Chaos Engine* and Gremlin's *Hero Quest 2*. On the review front, there are tests of *Silly Putty, Bat 2, Lotus 3, Sim Earth, Pool* and, as they say, lots, lots more...

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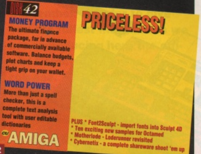
Putty wobbles in for review, page 66.

James Pond returns in *Aquabatics*, page 58.

COVERDISKS

This month we've got two action packed disks offering a varied selection of utilities, demos and games to help you get the most out of your Amiga.


DISK 42

MONEY PROGRAM
The ultimate finance package, far in advance of commercially available software. Balance budgets, plot charts and keep a tight grip on your wallet.

WORD POWER
More than just a spell checker, this is a complete text analysis tool with user editable dictionaries

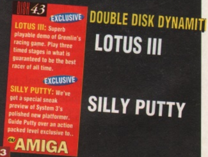
CU AMIGA

PRICELESS!

PLUS * Font2Sculpt - import fonts into Sculpt 4D
* Ten exciting new samples for Octamed
* Motherlode - Loderunner revisited
* Cybernetix - a complete shareware shoot 'em up

DISK 42

On the first of our two disks, we're giving away not one, not two but three professional quality utilities, plus two amazing games. To begin with, we've got *The Money Program*, a home accounts package to help you keep track of exactly where the monthly pay cheque disappears. Secondly, we've got *Word Power v1.3*, a spell checker that can solve crosswords. The third utility is the totally brilliant *Font2Sculpt*. If you've still got a copy of the *Sculpt 4D Jnr* package we gave away last May, then this program can take any standard Amiga bitmap font and convert it into a *Sculpt* object file, meaning that you can import and manipulate characters in any *Sculpt* package. Rounding of disk one are two of the best PD games around: *Cybernetix* and *Motherlode*.


DISK 43

EXCLUSIVE
LOTUS III: Superb playable demo of Gremlin's racing game. Play three timed stages in what is guaranteed to be the best racer of all time.

EXCLUSIVE
SILLY PUTTY: We've got a special sneak preview of System 3's polished new platformer. Guide Putty over an action packed level exclusive to..

CU AMIGA

DOUBLE DISK DYNAMITI

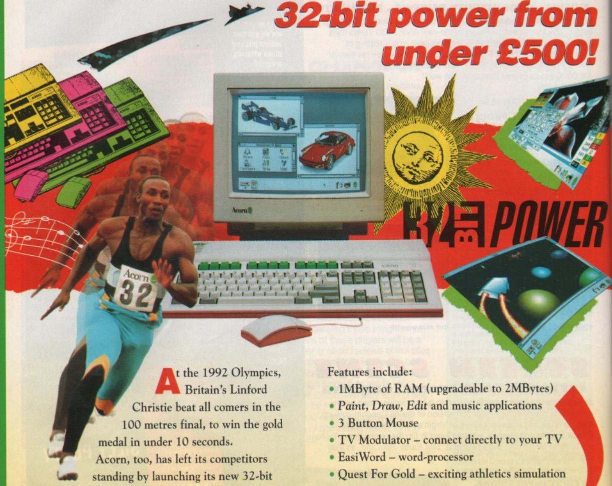
LOTUS III

SILLY PUTTY

DISK 43

Our second disk features a specially commissioned playable demo of System 3's superlative *Putty* game. In this, you must guide our flexible friend around a fiendishly difficult platform assault course, avoiding all manner of in-coming missiles and gunfire. Along the way, there are lots of bonus points to pick up as well as energy-giving food and CU Amiga magazines! Scoring a massive 95% in our review section, *Putty* is definitely the best of its type. Rounding off the disk is *Lotus III*, the latest and greatest playable demo of Shaun Southern's superb racing game. Our demo features the new windy section and comes complete with three timed stages to race your car through. Not only can you play the demo, but you can also see all the new features the game possesses. Totally excellent.

First out of the blocks – 32-bit power from under £500!



At the 1992 Olympics, Britain's Linford Christie beat all comers in the 100 metres final, to win the gold medal in under 10 seconds.

Acorn, too, has left its competitors standing by launching its new 32-bit computer range – starting from under £500.

The new computers, from a family learning and entertainment centre to the comprehensive home office, are awesome in speed, power and ease of use. Indeed, they are in a class of their own.

The Family Solution, at just £499* including VAT, has at its heart the Acorn A3010 32-bit RISC computer, offering a wide range of applications and software simply accessed via the system's multi-tasking windows and icons, in colour. With joystick support and hundreds of available games, family fun takes on a whole new dimension!

* *Monitor not included*

Features include:

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Acorn

A4000 LAUNCHED

A first glimpse of the latest Amiga.

The much awaited A4000 was finally released at the Pasadena World Of Commodore show on 11th September. In order to give you the fullest information we are reproducing here the official Commodore press release. We'll have a full review of this new Amiga as soon as possible.

Contact: Commodore Business Machines, Inc.
1200 Wilson Drive
West Chester, PA 19380
Mona Astra Liss or
Amanda K. Griffies
0101 215 431-9354

Pasadena, C A – September 11, 1992 Commodore Business Machines ,Inc. today introduced the Amiga (R) 4000, the company's revolutionary new pmier multimedia computer. The Amiga 4000 marks the company's most significant new technology advancement in its Amiga line since the product's introduction in 1985. In addition to the Amiga 4000, Commodore announced several other significant product introductions including AmigaDOS Release 3 Operating System, and AmigaVision Professional Authoring System.

James Dionne, President and General Manager of Commodore Business Machines, Inc., commented; 'These product announcements exemplify Commodore's continued commitment to offer computers with probably the best price/performance ratios in the computer industry today. We are confident that these products, particularly the Amiga 4000, will keep Commodore at the forefront of multimedia technology and enable us to continue our aggressive push in the multimedia marketplace.'

AMIGA 4000

This powerful new machine features Commodore's Advanced Graphics Architecture custom co-processor chip set that enables users to display and animate graphics in multiple resolutions at up to 256,000 colours from a palette of 16.8 million. The new hardware features are driven by AmigaDOS Release 3, the newest version of Commodore's multitasking operating system, in combination with the machine's main processor, the Motorola 68040. While this new version of the operating system takes advantage of the latest hardware features, it also maintains backwards compatibility with Amiga software not written specifically for the Amiga 4000.

The Amiga 4000 will come standard with a 120MB hard drive, 6MB of memory, a dual speed high-density floppy drive, and CrossDOS which enables users to read and write to MS-DOS formatted floppy and hard drives. Other key multimedia features include: a dedicated slot for video devices; selectable NTSC scan rate compatibility; four voice dual-channel digital audio; up to 8 sprites, enabling high speed animations; and full hardware video overscan. The Manufacturer's Suggested List Price for the Amiga 4000-040/120 is $3699.00.

AMIGADOS RELEASE 3

The newest version of the Amiga operating system adds several software enhancements to the previous 2.04 operating system. Among the new features are: CrossDOS, allowing access to MS-DOS formatted floppy and hard drives; a new Installer utility; and a Postscript printer driver.

Additionally, AmigaDOS Release 3.0 offers full support for the new Advanced Graphics Architecture chip set featured in the Amiga 4000.

AMIGA 4000 TECHNICAL SPECIFICATIONS

CPU:
- Motorola 68040 series 32-bit processor
- 25 MHz clock speed
- Removable processor module

MEMORY:
- 2 MB 32-bit Chip RAM
- Up to 16 MB 32-bit Fast RAM
- Easily expandable via standard SIMM units
- Additional standard RAM is supported by the Amiga's proprietary AUTOCONFIG capability

SOFTWARE:
- 512 KB 32-bit ROM
- AmigaDOS 3.0 Multitasking Operating System
- Supports programmable resolutions
- Supports outline fonts
- Localized for multiple language/countries
- CrossDOS MS-DOS file transfer utility

INTERFACES:
- Keyboard
- Mouse/Joystick/Lightpen/Tablet ports (2)
- Serial (RS-232)
- Parallel (Centronics)
- Video (RGB analog or RGBI digital)
- Right and Left stereo audio
- Internal and External floppy disk drive ports
- Internal AT IDE port. Optional SCSI adapter

SYSTEM SLOTS:
- CPU slot (200-pin) supports high-speed memory and advanced processors
- Amiga system bus – Four 16/32-bit Zorro III expansion slots (100-pin) with AUTOCONFIG
- PC bus – Three PCAT slots

VIDEO SLOT:
- Extended 24-bit Video slot
- In line with standard 100-pin Zorro slot for easy integration of Zorro and video boards

How the Slots Work: If MS-DOS compatibility is desired a Bridgeboard may be placed in slot 1, 2 or 3. When a Bridgeboard is installed, the empty PC slots are capable of supporting a wide variety of XT or AT-style boards. The remaining Zorro III slots support both 24 & 32-bit Zorro boards.

KEYBOARD:
- Detachable
- 94 keys, including 10 function keys
- Separate numeric keypad
- Separate cursor keys (inverted "T" layout)

MOUSE:
- Opto-mechanical
- 2-button design

DISK DRIVES:
- Built-in 3.5-inch high density disk drive (880 KB/1.76 MB formatted)
- Hard Drive models pre-formatted and pre-loaded with system software and utilities
- 2 rear and 2 front 3.5-inch drive bays
- 1 front 5.25-inch drive bay

GRAPHIC MODES:
- AGA custom chipset produces resolutions ranging from 320x200 to1280x400 (more with overscan), including 800x600
- NTSC and PAL video resolutions
- Color palette of 16.8 million colors
- 2 to 256,000 user-definable colors displayable on screen

VIDEO DISPLAY OUTPUT:
- Works with RGB analog VGA or multiscan monitors (not all modes supported with non multiscan monitors)
- Horizontal scan rats 15 kHz – 31 kHz
- Vertical scan rates 50 Hz – 72 Hz

SOUND:
- Four channel stereo sound, capable of reproducing complex waveforms
- 8-bit D/A converters
- 6-bit volume

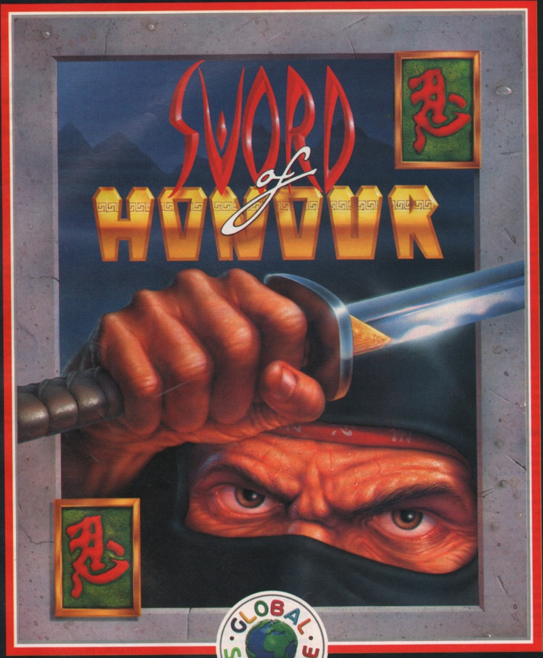
DIMENSIONS:
- 15 1/4" deep x 15" wide x 5" high

WEIGHT:
- Approx. 20 pounds

POWER REQUIREMENTS:
- 110 volt/60Hz 150 watt power supply

A4000 CONFIGURATIONS:

A4000-040/120
- Amiga 4000 with Motorola 68040 Processor, 6 MB RAM, internal 3.5" 1.76 MB Floppy Drive and 120 MB IDE Hard Drive
- 94-key Keyboard
- 2-button Mouse
- AmigaDOS Release 3.0 System Software and Utilities
- Gold Service Warranty Package



WITH THE SWORD OF HONOUR STOLEN, SHOGUN YUICHIRO'S HONOUR HAS BEEN VIOLATED. AS THE TOUGHEST NINJA AROUND IT'S UP TO YOU TO FIND THE SWORD AND DEFEAT YUICHIRO'S GREATEST ENEMY – THE EVIL TORANAGA.
THE GAME FEATURES LETHAL WEAPONS, VICIOUS HAND-TO-HAND COMBAT, AND AWESOME GAMEPLAY. WITH WICKED MUSIC, SOUND EFFECTS, 90 COLOURS ON-SCREEN, AND 2.5 MB OF MENTAL GRAPHICS THIS GAME MUST BE ONE OF THE MOST REALISTIC MARTIAL ARTS GAMES EVER!

Sword of Honour is available on Amiga (£25.99), and PC (£29.99), from Global Software, Unit 3, Poyle 14, Newlands Drive, Colnbrook, Berks. SL3 0DX.

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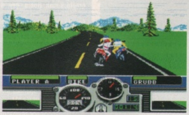
Softwareentwicklung GmbH

RASH AND BURN

Roaring along on the heels of EA's *Desert Strike* is a conversion of their smash-hit Megadrive race game *Road Rash*.



Take to the back-roads of America on a top-of-the-range Japanese motor bike as you throw the rule book out of the window and use every dirty tactic to win. Barge opposing riders out of the way, punch them or smack them with a baseball bat, once they're down they'll never catch up. You receive wads of cash if you win a race, which can be invested in a new, faster crotch-rocket.

Each of the twenty riders has their own personality, and if you get a little too free when dishing out hits you may find a few of your ex-mates singling you out for 'special treatment'. Then there's the constant threat of on-coming cars and the police, who don't take kindly to this kind of high-octane malarkey taking place in their back yards. *Road Rash* is due out this Christmas and from what we've seen it's identical to the Megadrive version, which is no bad thing.

CHRISTMAS BUNDLES ANNOUNCED

The contents of the Amiga Christmas bundle were announced at Commodore's Maidenhead HQ earlier in the month. Traditionally a well kept secret, this year was no different as those magazines speculating on the contents of the packs proved to be spectacularly wide of the mark.

The plain A600 pack, called 'The Wild, the Weird and the Wicked' contains, apart from the A600, *Deluxe PaintIII, Push Over, MicroProse Grand Prix* and *Putty*. The price, which includes the one-year on-site guarantee, is £349.99.

EPIC
LANGUAGE LAB

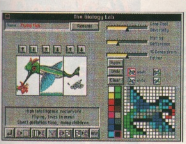
The 'serious' pack is based around an A600 with 20Mb hard drive (the A600HD). *Deluxe Paint III* is included, along with four games: *Myth, Rome, Epic* and *Trivial Pursuit*. The Trivial Pursuit included is the Language Lab edition , which explains all the flags on the back of the box. This second pack is priced at £499.99.

OUT IN THE COUNTRY

They've simulated cities, they've simulated ants, they've even simulated a planet. Now Maxis have come back down to Earth with *SimFarm*. Yes, it's a farming simulation.

You are the farmer, knee-deep in the leavings of your livestock. The object is to create a profitable farm by managing crops and animals, fighting off pests, trading produce for gold, surviving droughts, floods and other natural disasters (although sheep-burning French farmers aren't included). The PC version is due out at the end of the year and we're expecting an Amiga version mid '93.

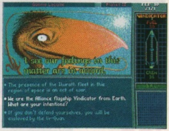
Also on its way to bolster the Sim range is SimLife, which lets you create your own life form then sit back to see what happens. First build an ecosystem and then a creature. Turn it loose with the indigenous population to see if it evolves, bites the dust or destroys the food chain. One of the game's aims is to demonstrate the relationships between animals in the food chain and how creatures evolve to suit climate and terrain. Apart from that, the freedom you're given in creating a life-form lets you produce some really twisted creature-from-the-dawn, guaranteed to rip its fellow fauna to shreds. Keep an eye out for this next year.



High intelligence nectarvore
Flying, lives in ocean
Short gestation time, many children

WHO'S IN CONTROL

Accolade are releasing a follow-up to *Star Control*, their highly underrated arcade-cum-strategy space game.

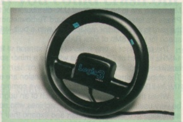


I see our feelings in this matter are in accord.

- The presence of the Ilwrath fleet in this region of space is an act of war.
- We are the Alliance flagship Vindicator from Earth. What are your intentions?
- If you don't defend yourselves, you will be enslaved by the Ur-Quan.

Star Control 2 is set 20 years after the first one. A role-play element has been introduced and you're now cast as an inhabitant of the planet Unzerval who has been sent out into the big wide galaxy to find out why no contact can be established with Earth or her allies. All this leads to encounters with aliens and numerous space battles featuring up to 28 ships at a time. Improvements over the original game include more ships, giant starbases, 3000 planets, 18 alien races and plenty of sub-plots.

If you don't want the hassle of puzzle solving and striking a deal with the tentacular alien you found on Zuphong 5, you can play in melee mode, which is out and out combat between you and the computer, or a friend.



FREE-WHEELING IT

Many companies have experimented with the concept of a steering wheel controller before, with limited success. But Logic 3 think they've cracked it this time with the Freewheel.

Conspicuous in its absence from this controller is any form of mounting. Instead, the wheel is held in mid-air and works by using tilt-switches which respond when it's turned. There are two trigger switches mounted on the top, an endorsement from Nigel Mansell and it's due to hit the shops by Christmas.

MERIDIAN DEAL FOR CAD ENTHUSIASTS

CAD afficianados should take note of a special offer now underway at Meridian, formerly Precision Distribution, involving *XCad*.

XCad is an industry standard Computer Aided Design package which is widely recognised as being the best you can get on the Amiga as well as the IBM PC or the Apple Mac, and the version in the deal is XCad3000.

Because of its design features and fairly user-friendly output, it is recommended that you use the software via a graphics tablet, so one is included in the deal. The Cherry graphics tablet is also available across a range of computers and is used widely in professional and industrial applications.

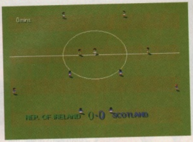
The complete pack, normally costing £910 will be available for the stunningly low price of £699. Call Meridian on 081 543 3500.

YOU KNOW IT MAKES SENSE

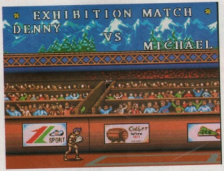
Renegade are set to release an updated version of Sensible Software's top-rated *Sensible Soccer* this October.

Soccer version 1.1 isn't a sequel, but the same game with several improvements. All the team and league information has been updated, so you now get the 92-93 teams, and the goalkeepers can now tip the ball over and around the goal. If you've got the original you can receive an updated version by sending your disk back to Renegade with a cheque for £3.95 (excluding P&P).

There's good news for CDTV owners, too. The CD version of *Sensible Soccer* will be available at Christmas, priced at £19.95.



SUPER SMASHING LOVELY



Despite the onset of winter, you can still take to the tennis courts courtesy of *Smash!* from Idea.

Smash! features grass, hard and clay courts as well as eight selectable players, each with a battery of conventional moves plus a unique smash-shot. Holding down the fire-button activates a target over the ball which lets you accurately place your shot in your opponent's court. You can test your shots by competing in a tournament or single game against the computer or a friend. Alternatively, take part in a training match to sharpen skills. Out in November.

HYPERARTS '92

October will see the opening of the very first Hyperarts festival in Liverpool. As part of the city's wider Visionfest, the Hyperarts festival will be concentrating on computer generated art.

As well as an exhibition featuring the works of more notable computer artists, and demonstrations from developers such as Psygnosis, the main thrust of the exhibition is towards art created by more humble mortals -you.

The submission event will feature artwork sent to the festival and will be judged in categories according to age. You haven't got long though, so dust off your Dpaint and send those submissions to: Tristan Brady-Jacobs, Hyperarts '92, 110 Bold St. Liverpool L1 4HY.

MEMORY BLIZZARD FROM MICROPACE

Micropace are to be the official U.K. distributors of the German company Phase 5's latest product, the Blizzard Turbo memory board. Essentially the card is a processor replacement with a built-in ROM Switcher and space for up to 8Mb of Fast RAM.

The processor is only a faster rated version of the 68000 (clocked at 14MHz instead of 7.14) but this will give a minor speed increase with virtually no compatibility problems.

The chips required for the memory expansion are either 256x4bit or 1Mbitx4 DIPs as opposed to the nowadays common SIMM modules.

Whilst the processor itself isn't much of an upgrade the board could be very useful to those with older machines who now want to take advantage of the latest Kickstart and expand their memory capacity. MicroPace are on 0753 551888

CIAO GAZZA

If you're sick to death of barely-twitching corpse that is English soccer, Idea are offering you an escape route to the Italian league.

Dribbling signs you up as player-manager of a top Italian team in the 92/93 Italian championship. Seventeen other clubs are pitted against yours as you set the tactics, choose the squad, then don the boots of your adopted team. When the match is over you get to sit back and watch the sports pundits go through the highlights of the game.

LAND OF THE LITTLE PEOPLE

Just when you'd thought you'd seen the last of the little people, the Gobliiins return. *Gobliins 2*, The Prince Buffoon, follows a similar puzzle-solving line to the first one. This time there are two gobliins under your control, Fingus, the diplomat, and Winkle, the joker. They're out to save the Prince who has been kidnapped by the demon king and replaced with a jester. The gobliins have to work together to solve puzzles and avoid traps as they encounter the kind of creatures reserved for the worst kind of corny nightmares. You can find *Gobliins 2* from Coktel Vision this Christmas.

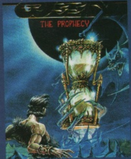
GAME MUTTERINGS

Renegade have announced their next project which is due for release next summer. Details are scarce, but former Strangeways programmer Jason Perkins and ex-System 3 graphics man, Robin Levy, will working on it.

Empire are releasing a compilation containing *F-15 II*, *688 Attack Sub* and *Team Yankee*. It's priced at £29.99 and should be available now.

Mindscape are preparing to go up, up and away with Champions – an RPG where you get to play a super-hero. There are twelve scenarios, and you get to design your own hero from scratch, selecting what powers they have and what colour spandex their costume should be. Available early next year.

Coktel Vision are bringing *Ween* our way in time for Christmas. Ween is the star of a graphic adventure of the same name. He's out to fulfill a prophesy by journeying to the heart of the kingdom of Blue Rocks and defeat Kraal, a mysterious demon with a silly name.



Cattivik, from Idea, is a game about crime. You are Cattivik and your mission is to place traps and rob the hapless people who get caught in them. Between each level is a bonus stage where you get to hurl eggs at mice – all very strange. Another Christmas release.

SCRATCH CARD WINNERS

So far we've only had one winner of our four A570 units, which means that there are still three up for grabs. If you've still got your scratchcard handy, make sure it doesn't say you've won a CD unit! For those of you who are waiting for us to print what the phone lines had to say, wait no longer.

If your card had the 0839 335543 number printed on it, you've won a £5 discount off Kick Off 3. If you found the 0839 900018 number beneath the silver panel, you've won one of the 200 Kick Off 3 games that were up for grabs.

Tonight you could
prang an F-19, shatter enemies from your M1 tank
or have a smashing dogfight in your F15

Alternatively you could crash out in front of the TV

With incredible animated graphics putting you squarely in the hot seat, there's no excuse to be sluggish!

These realistic simulations give you a 3D perspective of combat in the sky from your jet fighter cockpit or on the ground from your tank turret. Each game demands that you use your finely honed skills to decide on strategy, missions and campaigns. More of a challenge than waiting for a rerun of Top Gun, really.

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The story so far – in an immense fit of generosity CU Amiga are giving away not one, not two but three professional quality utilities on their first coverdisk, plus some amazing games. On the second you'll find a playable demo of System 3's excellent Putty game as well as three stages from Gremlin's Lotus 3.

42 43

COVERDISKS

ON YOUR DISKS

Forty two is the answer to the ultimate question of life, the universe and everything. It could also be the answer to a lot of your problems as we have somehow managed to pack Disk 42 to bursting point with useful utilities.

Disk 43 is also something quite special as we've got a playable demo of the yet-to-be-released *Putty*, courtesy of System 3. And if that wasn't all, you'll also find a playable demo of Gremlin's *Lotus 3*. Get loading!

IF YOUR DISK WON'T LOAD...

In the unlikely event of your CU Amiga coverdisks not loading, remove all cartridges and peripherals and try again. If they still won't load, pop it in an envelope and send it to: CU DISK RETURNS, PC WISE, DOWLAIS TOP BUSINESS PARK, DOWLAIS, MERTHYR TYDFIL, MID-GLAMORGAN, CF48 2YY. They will then test your disk and send a replacement as soon as possible. For any urgent problems, though, please ring the PC Wise helpline on 0685 350505 and this line can be reached between the hours of 10.30 and 12.30 weekdays. Whilst CU AMIGA makes every effort to check our coverdisks for all known viruses, we can accept no responsibility for possible damage caused by viruses which may have escaped our attention.

THE MONEY PROGRAM V1.0

Written by Alan Bilsborough.

LOADING DISK 42

There are no difficult bits this month – no preparing blank disks in advance, no copying files or renaming anything. To use the programs on this disk simply turn your machine on and insert CU42 when your Amiga asks for a disk.

The programs run by simply clicking on their icons, and all the original documents can be accessed via the menu system too. Have fun...

The *Money Program* is a home accounts utility program which allows the user to keep track of up to 12 accounts simultaneously. These accounts are stored as one file allowing quick and flexible interaction between different accounts. All transactions are also related to user-defined groups (i.e. Electricity Bill, Wages etc.) enabling budgets and expenditure to be carefully monitored.

Full instructions for this program are included on the disk and it is strongly recommended that you print these out or read them thoroughly if you intend to use this program a lot.

MAIN MENU

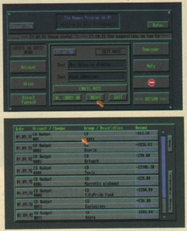
As well as accessing the above menus the main menu also has five additional options which the author felt would be the most frequently used options :-

1) Input Transaction
2) View/Edit Account File
3) View/Edit Group File
4) View Account Graph
5) Budget Comparison

INPUT TRANSACTION

Hopefully this will be your most used option. The more transactions you enter the greater your ability to monitor expenditures (as well as keep your accounts up to date). A total of 2500 transactions can be input. All transactions have six elements :-

1) Date
2) Account
3) Group
4) Description (Optional)
5) Cheque Number (Optional)
6) Amount



If you want to get your finances in order and keep a note of exactly where your money goes each month, then *The Money Program* will help keep your money in order.

Note: No Transactions can be input until at least ONE account and ONE group has been created as they are integral parts of the transaction. Editing of transactions is very easy, so don't worry about making mistakes as they can be rectified later.

View/Edit Account File. This option allows you to view an entire account file. All View/Edit Options allow you to edit transactions by clicking on their button.

View/Edit Group File. View and/or Edit an entire Group File.

View Account Graph. Displays a graph of the history of the account. Click Left Mouse Button to Exit

Budget Comparison. This option allows the user to see at a glance the percentage of budget spent to date.

VIEW/EDIT OTHERS MENU

This menu has 3 lesser used View/Edit Options:

View/Edit Complete Transaction File. Self Explanatory

View/Edit Filtered Transaction File. This option was introduced to produce a more flexible option for the user to view/edit any combination of accounts and/or groups. The first option screen allows any number of accounts to be specified (ranging from none chosen to all chosen). The

QUICK START

The Money Program is very simple to use, but as with all software, it could be a bit confusing to begin with. We suggest you start like this:

- Boot up from the coverdisk
- Double-click on *The Money Program* icon
- Wait for the program to load
- Click once on the LOAD/SAVE menu icon (in the bottom right of the screen)
- Click once on the Load example data icon
- Wait for the data to load
- Click on the RETURN icon
- Now there is some data loaded you can explore all the menu options outlined above and see how they operate on real data before you create your own

Remember to have a blank disk standing by if you want to save any account data that you have entered.

second option screen allows any number of groups to be combined with your choice of Account(s). The group option screen allows the chosen groups to be either added to the chosen account(s) file or taken away.
View/Edit Cheque File. Any specified cheques will be displayed.

CREATE MENU

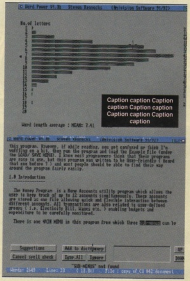
This menu creates the framework for your transactions and has options to create five different items:
Create Accounts. Allows up to 12 accounts and their starting totals to be defined.
NOTE : The account names and their totals can be edited but NOT deleted. As transactions are always related to an account it is important that the original accounts are ever-present. The same reasoning applies to Groups. It is therefore important to put some thought into the creation of accounts and groups.
Create Groups. Allows creation of up to 30 groups. The above Accounts Note also applies to groups so it is advisable not to create too many minor groups which would not be used much. For these minor groups, it would be advisable to create a general group and use the DESCRIPTION to define the transaction more clearly. If required, the user can also define a budget for each group. This budget can then be compared to the actual amount spent using the MAIN MENU option – 'Budget Comparison'
Create Direct Payments. Direct Payments are regular payments which are automatically added to your transaction file. Payments can be made on a X-monthly basis (where X can be 1 to 12). The day of payment can also be specified. A total of 20 Direct Payments can be defined.
Create Reminders. Reminders can be used to (you've guessed it) remind you of forthcoming events i.e. Birthdays, Car Service Due etc. They consist of one line of reminder text and the reminder date. The reminders are displayed in the scroll line. A total of 20 Reminders can be defined.
Create Notes. Notes can be used to store any lines of text which the user may want to store i.e. bank addresses, telephone numbers or card numbers etc. They consist of two lines of text and are displayed in the scroll line. A total of 20 Notes can be defined.

LOAD/SAVE MENU

Data in this utility should be stored on a separate Data Disk. Please prepare a formatted disk. Save data once you have edited your file. If you want to start a new file, you will have to use a separate disk as there are *no* options to select and save separate files.
LOAD from Data Disk. When selected, the program will look for data in drives Df0: and Df1: and, if found, will automatically load the data.
Load Example File. This option will load the Example File which is supplied on the Program Disk. Please note that Data loaded from the Example File cannot be saved.
SAVE to Data Disk. Saves data to your Data Disk. If a Data Disk is not present the program will ask why not!
Save for Next Period. This is a special save option which saves everything to a Data Disk *except* the Transaction File.
NOTE : The User will *not* be able to save this data to an existing Data Disk, so please prepare another Data Disk.
Save Ascii File (Account). Printers are not supported directly, so if you want to print out your account use this option to save it as an ASCII file on disk and then print it via a word processor or by copying the file directly to the printer.

WORD POWER V1.3B

Written by Steven Rennocks 1Mb required.


Word Power V1.3b   Steven Rennocks   (Univision Software 91/92)
No.of letters
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Word Power V1.3b   Steven Rennocks   (Univision Software 91/92)
Suggestions
Add to dictionary
Cancel spell check
Ignr.All
Ignore
UP
DOWN

Word length average : MEAN= 7.41

this program. However, if while reading, you get confused or think I'm waffling on a bit, then run the program and load the Example File (under the LOAD/ SAVE MENU). I know most programmers think that their programs are easy to use, but this program was written to be User-Friendly (Heard that one before ?) and most people should be able to find their way around the program fairly easily.

1.0 Introduction

The Money Program is a Home Accounts utility program which allows the user to keep track of up to 12 accounts simultaneously. These accounts are stored as one file allowing quick and flexible interaction between different accounts. All transactions are also related to user-defined groups (i.e. Electicity Bill, Wages etc.) enabling budgets and expenditure to be carefully monitored.

There is one MAIN MENU in this program from which three SUB-MENUS can be

"SUB-MENUS" not found

Words= 2149   Line= 33   (13.3k)   File : copy_of_CU 042:document

Caption caption Caption caption Caption caption Caption caption Caption caption

***Word Power* is a spell checker that also uses its database of words for a few things, other than just spell checking. *Word Power V1.3* will spell check documents, solve crossword clues, solve anagrams and even help you with your Scrabble* game. Not only that but *Word Power* is also rather fun to use!!**

WORD UP

When *Word Power* is first loaded it will try and load a dictionary. The dictionary depends upon the default dictionary name in the OPTIONS. If the default dictionary name cannot be found then you will be presented with a file requestor that will ask you to select a dictionary to load. Dictionaries should have a '.dict' extension on the main filename so that you can tell them from other files on the disk unless of course that is not part of the default dictionary name that you have set for your own dictionary. The lower display bar tells you the number of words that are in memory.

When the dictionary has loaded you will be presented with the main menu. Most of the options are explained below, but you can find full instructions on the disk.

OPTIONS

The options screen allows you to customise the *Word Power* set-up to suit your needs. There are three options to change:
Default dictionary name. When you click this option you can edit the name of the dictionary that will automatically be loaded each time you load *Word Power* and every time you save the dictionary (i.e The default dictionary name). The default name is 'SYS:WP.dict'.
Highlight words. This option simply lets you decide if you want unknown words highlighted while you are spell checking a document.
Clear ignored words after spell checking. When you are spell checking a document you can ignore a word which will then be ignored if found again.

WORD ANALYSIS

This option is not very useful, but is fun to use if you are creating your own dictionary. All it does is draw a bar chart showing the number of words containing a certain number of letters in the loaded dictionary. The mean and mode average word lengths are also displayed at the bottom of the screen.

SPELL CHECK DOCUMENT

This is the main feature of *Word Power* and thus is easily the most powerful. Firstly, you must choose a document to spell check. If a file is powerpacked or contains binary then *Word Power* will recognise this and cancel spell-checking before any adverse effects are caused. Once you have selected a text file it will be loaded and checked line by line until the end of the file is reached.
Working from the left each word that is unknown to the dictionary will be highlighted (if that option selected) and mentioned at the bottom of the screen. The options now available for this word are:
Ignore. Ignores the current word. Click on *ignore* box or simply click LEFT mouse button.
Ignore all. Totally ignores the word and all repetitions of this word. Click on *ignr.all* box.

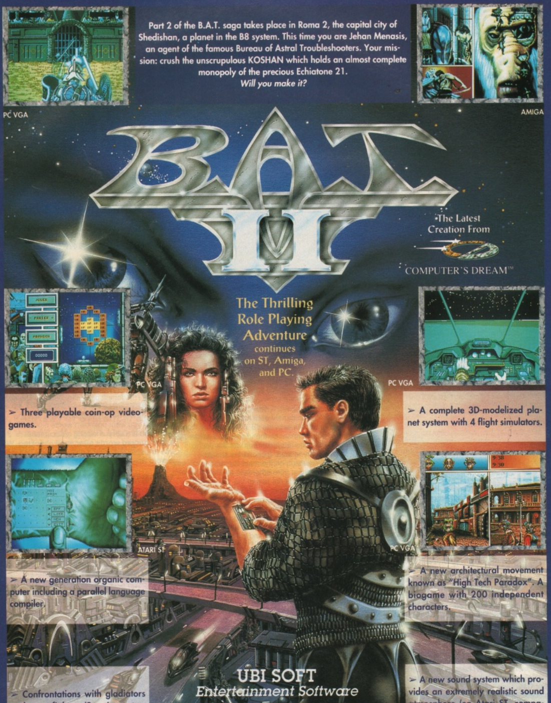
➢

THE DICTIONARY

The small included 2,500+ word dictionary is a small dictionary to get you started. If you register as a *Word Power* user (read Shareware scheme file on the disk through Workbench) you will receive many benefits including a new version of *Word Power* that includes an 11,500+ word dictionary.

**SCRABBLE is a trademark of SPEARS GAMES LTD.*

Part 2 of the B.A.T. saga takes place in Roma 2, the capital city of Shedishan, a planet in the B8 system. This time you are Jehan Menasis, an agent of the famous Bureau of Astral Troubleshooters. Your mission: crush the unscrupulous KOSHAN which holds an almost complete monopoly of the precious Echiatone 21.
Will you make it?



The Thrilling Role Playing Adventure
continues on ST, Amiga, and PC.

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- Confrontations with gladiators and street fighters (2 options: strategy or arcade).
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Yateley, CAMBERLEY GU17 7RX
Tel: (0252) 860.299

Add word. This adds the current word to your dictionary. Click on *Add Word* box or just press RIGHT mouse button while not over an option box.
Suggestions. This will give you a list of possible suggestions for the unknown word. Click left button on UP and DOWN boxes to move up and down the list if there are more than three suggestions. The word is also displayed above the suggestions, in the 'WORD BOX'. Clicking the left button on this will let you enter the correct word if it is not one of the suggestions. If you selected one of the suggestions it will be copied into the WORD BOX so that you can edit it.

You now have three more options:
Replace All. This will replace all occurrences of the misspelt word with the word in the word box.
Replace. Just replaces the current misspelt word with the word in the word box.
Cancel. Does not replace any words. Returns to main spell check menu.
When you finish spell checking you have the option to either *Save* the spell checked document or *Ignore* the spell checking.

TEACH SENTENCE

This allows you to teach the dictionary a sentence of words. Simply type in a line of words with spaces and each word will be spell-checked.

SOLVE ANAGRAM

This option solves anagrams (surprise, surprise!). Enter the word you wish to find all the anagrams of and then wait a few seconds before all the anagrams of the word you have entered will be found.

SOLVE CROSSWORD

Enter the word you wish to find, but replace any letters that you do not know with question marks "?" (e.g. ??s?? will find all five letter words which have the letter 's' as the third letter e.g. RESET, LISTS etc.)

LOAD DICTIONARY

This allows you to load any Word Power compatible dictionary.

SAVE DICTIONARY

This allows you to save your dictionary under any filename, but it should end with .DICT so that Word Power can recognise it when it comes to load it back in.

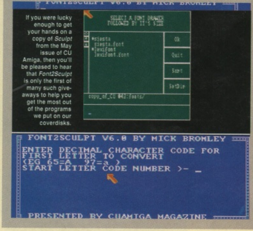
FONT2SCULPT

1Mb required

Font2Sculpt is a program specially commissioned by CU Amiga to complement the *Sculpt 4D Jr.* package we gave away on our coverdisk back in May.

The idea of the program is to take any standard Amiga bitmap font and convert it into a Sculpt object file, meaning that you can import and manipulate characters in any Sculpt package. Aside from anything else this could turn your Sculpt software into quite a sophisticated titling package.

Unfortunately, due to compatibility problems, owners of some Kickstart 1.3 machines will not be able to use it. If you believe you may be afflicted in this way, send your disk to: CU Amiga *Font2Sculpt*, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. We will replace your copy of Font2Sculpt with another version of the software and send it back to you (don't forget your name and address!)



```
FONT2SCULPT V6.0 BY MICK BROMLEY
ENTER DECIMAL CHARACTER CODE FOR
FIRST LETTER TO CONVERT
(EG 65=A   97=a )
START LETTER CODE NUMBER >- _

PRESENTED BY CUAMIGA MAGAZINE
```

If you were lucky enough to get your hands on a copy of *Sculpt* from the May issue of CU Amiga, then you'll be pleased to hear that *Font2Sculpt* is only the first of many such give-aways to help you get the most out of the programs we put on our coverdisks.

INSTRUCTIONS

First of all make sure you have somewhere to store the data if you are going to output all the characters in a font you will need to format a disk (the object files can be quite large).

Run the program by double clicking on its icon. A requestor will appear asking you to select a font and size to be processed. It will default to the SYS:Fonts directory, the font directory on your boot disk. Remember that you have to indicate the size by going into the font-name drawer and selecting one of the size files, which are given numbers indicating their point size. Of course, you can scale the fonts up and down in your *Sculpt* application but remember that the bigger the original font size, the more accurate the shape of the letters will be.

Once selected either double click on the number or click on the OK gadget. The font will then be loaded into memory and analysed by the program. You will be asked to enter a numeric value for the start of the process. This relates to the ASCII code value of the character to start with (e.g. 'A' is 65 and 'a' is 97). Then you will be asked to input the code number of the end of the sequence (e.g. 'Z' is 90 an 'z' is 127). All characters between the two specified will be processed and an individual object file created for them.

If you are running on a floppy drive, now is a good time to swap disks and put in a blank one to save the object data on. Saving the data may take some time so please be patient.

Once that's over you now have plenty of object files to import into *Sculpt* and manipulate however you like.

CYBERNETIX

1UP 00001900
ENTERING SECTOR.

Fast and furious action are guaranteed in this brilliant *Defender* clone that puts the rest to shame.

CONTROLS

Up – Up
Left – Left
Fire – Fire
Space – Smart bomb
Right – Right
Down – Down

Remember *Defender*? That aged coin-op has spawned many clones and *Cybernetix* is one of them. The action is fast and furious as you roar through deep space blasting asteroids, zapping aliens and collecting crystals.

The game contains a list of the ships you'll encounter and what their tactics are. Be on the look out for The Assassin though, this ship comes after you if you hang around too long. It's almost impossible to destroy, so get a move on. Keep an eye on the radar at the top of the screen. It shows you where the aliens, crystals and asteroids are as well as flashing up messages informing you that a horde of new enemies has just warped in.

You have one trick up your sleeve: a smart bomb. When the going gets really tough hit the space-bar and all the on-screen enemies will explode. Power-ups appear from time to time and include extra fast bullets, two-way and rear fire and a shield.

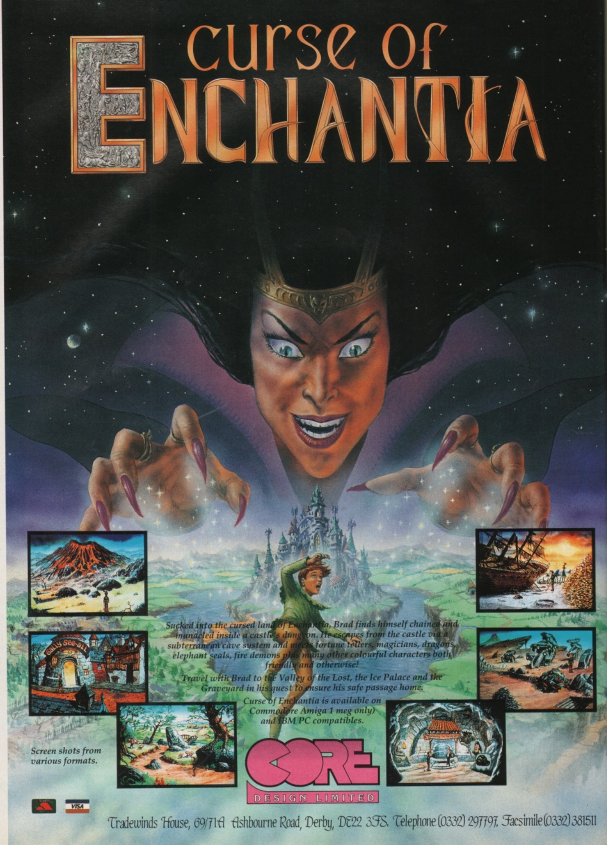
Collecting the little blue crystals adds to your score, and you're rewarded with an extra life every 5000 points. Another good reason to collect them is that some of the aliens also go after them, and if they get hold of one or two they turn into mutants which attack at twice the usual speed.

OCTAMED SAMPLES

Also on this disk are ten new samples to use with OctaMED. The samples are in a drawer on the coverdisk, but they won't show up on the menu if you boot from the coverdisk.

To use them either boot up from Workbench and copy the contents of the samples directory onto your usual samples disk, or alternatively you can run OctaMED and import the samples directly.

All the samples are of a professional quality and may be used in your own tunes without worrying about nasty copyright problems.



Sucked into the cursed land of Enchantia, Brad finds himself chained and manacled inside a castle's dungeon. He escapes from the castle via a subterranean cave system and meets fortune tellers, magicians, dragons, elephant seals, fire demons plus many other colourful characters both friendly and otherwise!

Travel with Brad to the Valley of the Lost, the Ice Palace and the Graveyard in his quest to ensure his safe passage home.

Curse of Enchantia is available on Commodore Amiga 1 meg only) and IBM PC compatibles.

Screen shots from various formats.

CORE
DESIGN LIMITED

VISA

Tradewinds House, 69/71A Ashbourne Road, Derby, DE22 3FS. Telephone (0332) 297797. Facsimile (0332) 381511

PUTTY SYSTEM 3

LOADING DISK 43

Just insert either disk in your drive, wait a few seconds, click once on the game you want to load, sit back and play it. If you have any loading problems contact PC Wise, whose address is given elsewhere in this section.

THE COMPLETE GUIDE TO THE AMIGA
CU AMIGA

Planet Zid is in dire straits, and we don't mean the pop group. Dweezil, the evil ginger cat, has stolen the only four copies of CU Amiga on the planet, and to make things worse he's imprisoned several 'bots in the new CU office – on the 300th floor of a skyscraper. Putty has to rescue all the 'bots and track down the missing CUs by sunrise or something pretty nasty will happen.

Probably.

The only way to save a 'bot is by either carrying him to the elevator at the bottom-left of the level, or clearing all the hazards and letting all of them make their own way there. If you don't keep an eye on them they'll end up being devoured by the red blobs on the third level. It pays to clear all the hazards first, absorbing the occasional creature to top up Putty's pliability gauge.

The CUs appear out of mid-air from time to time, so keep an eye out for them. They can be collected by forming a pool and absorbing them, as can the other bonuses.

Being a sentient blue lump has its advantages. Putty can withstand the kind of punishment that would reduce any normal hero to a quivering mass, and he can distort himself in a number of bizarre ways to confound and destroy his enemies. All he has to do is keep an eye on the pliability gauge at the top of the screen – if this runs down he won't be capable of even holding a window pain in place.

Bounce – Up+direction
Using his elastic abilities, Putty can launch himself into the air, over gaps and nasties.

Stretch – Fire+direction
Putty's pliable nature lets him stretch horizontally and vertically across gaps and up platforms.

Melt – Down
Reduces Putty to a blob of blue slime, allowing him to avoid or capture nasties and 'bots.

Absorb – Down+wait
Melt Putty and wait for something to walk over him. Absorbed animals and vegetables increases his pliability. 'Bots can also be absorbed and stored safe from harm. Melt again to release them.

Slither – Left or right
Putty can sprout little legs and trot across tricky gaps.

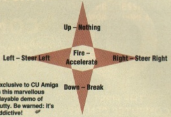
Inflate – Fire+up and down rapidly
Increases Putty's size fourfold. Useful for saving 'bots from long drops.

Explode - Inflate past maximum size
The exploding Putty blows away all nearby nasties, although doing so reduces his pliability by 25%.

Mould – Melt+fire twice
Putty can take on the form of some creatures by moulding with them. You have to experiment to find out which ones it works with.

Make coffee – Melt and hold fire
Puts the busy 'bots on a well-earned 30 second coffee break.

Punch – Fire+jab left or right
Putty forms a boxing glove which flattens anything on the receiving end.



Exclusive to CU Amiga is this marvellous playable demo of Putty. Be warned: it's addictive!

KNOW YOUR ENEMY

Right then, pay attention Putty. The enemy are everywhere, trying to get you and your 'bots.

SPACEHOPPER PIGS
You can't absorb or squash these, but you can punch them out of the way.

DUCKS
An escaped duck is a dangerous one, as they drive around in steamrollers looking for blue blobs to squash.

MUSHROOMS
Your weakest foe. Squash or punch them. Alternatively, absorb them for extra pliability.

FIREWORK IMPS
Whilst dangerous, the Imps are none too bright. They can be punched, squashed or absorbed, or you can wait for them to shoot each other.

MARMADUKE THE MAGICIAN
He uses his magic wand to change bots into rabbits, which explode after a while.

RED BLOBS
Almost invincible. Fortunately they appear near Marmaduke, so when he creates a rabbit, absorb it and use the Mould function. You'll turn into a replica of the rabbit which the blobs will absorb. Expand and you can now blow the blob to pieces.

POWER-UPS TREVOR
Trevor is Putty's special invisible friend. He hides out in bits of the scenery and drops power-ups.

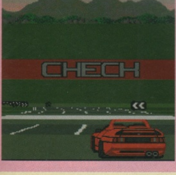
UNCLE TED AND HIS HOME ORGAN
Good old Uncle Ted appears with organ to provide a knees-up for the nasties. When he plays they dance.

POCKET WATCH
Adds time to the countdown.

DWEEZIL POWER
Renders Putty invincible.

BUBBLEGUM
Lets Putty explode four times without losing pliability.

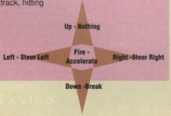
LOTUS III



Gremlin's follow-up to the excellent Lotus 2 features a track designer, different vehicles and an in-car stereo. You get to see all these in action on our cover disk.

Load it up and you can sit back and watch as your Amiga takes control and guides you through some of the game's features. Then take a Lotus for a spin on a pre-set track where the wind is so strong you have to fight to keep your car on the track.

You'll pick up extra time when you pass a check-point and the car has an automatic gear box so you don't have to worry about gear changing. Keep an eye out for tumble weeds which blow across the track, hitting



MOTHERLODE

This game is a throw back to the early eighties when titles like Pitfall and Loderunner were hits. The objective is simple, collect the gold and the avoid the people. Your character can't jump, but he can blast holes in the floor, which the nasties fall into. When you've collected everything climb up the highest ladder to progress to the next level.

The nasties will start chasing you when you're on the same level as them, but they're not too bright and it's easy to lead them into a hole or off of a platform. Some levels feature pipes which you can swing from, but you enemies can follow you onto them as well, so don't hang around.

Controls are simple: Up to climb, down to go down, left to go left and right to go right. Press fire to dig a hole.

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CU AMIGA TOP RATED

AMOS professional

The most eagerly-awaited software package of the year has finally arrived. Tony Dillon takes the wrappings off AMOS Professional and is very impressed indeed.

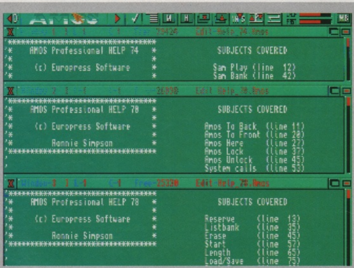
GREAT EXPECTATIONS

AMOS is without doubt one of the most powerful high-level languages on the Amiga – and definitely the easiest to use. In case you're not familiar with the terminology, a low-level language is something like C or Assembler, where what you write are direct instructions to the processor. In AMOS, you enter commands that are extremely close to English, and these are then turned into machine code for the processor to act upon. Unlike other forms of BASIC, AMOS was written specifically for the Amiga, and therefore has the capability to turn out some truly outstanding programs.

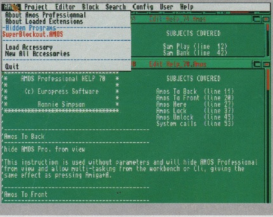
MOVING AHEAD

AMOS began life almost 3 years ago, and since then the basic module has seen three major extensions: the AMOS Compiler, AMOS 3D (a polygon generating set of instructions that were installed in the main module) and the AMOS TOtal Map Editor (TOME). Now, after months of research, Europress is about to launch AMOS Professional. Two hundred registered users were sent questionnaires and asked what they would like to see in an improved AMOS package. This six-disk product is the result of all that research, and the difference between the two packages is striking.

Two hundred and fifty new commands have been implemented, but we'll talk more about them later. What's even more impressive is the completely new environment that Europress have created. The main editor has been completely reworked. Instead of the original box of ten icons at the top of the screen, the enlarged edit window fills the entire screen, with only a thin strip of icons running along the top. A Workbench 2-style effect has



```
Window-3  ] L-1      C-1   Free-25330    Edit-Help_78.Amos
**********************************
*    AMOS Professional HELP 74    *          SUBJECTS COVERED
*                                 *
*    (c) Europress Software       *          Sam Play (line  12)
*                                 *          Sam Bank (line  42)

**********************************
*    AMOS Professional HELP 78    *          SUBJECTS COVERED
*                                 *
*    (c) Europress Software       *        Amos To Back  (line 11)
*                                 *        Amos To Front (line 20)
*       Ronnie Simpson            *        Amos Here     (line 27)
**********************************         Amos Lock     (line 37)
                                           Amos Unlock   (line 45)
                                           System calls  (line 53)

**********************************
*    AMOS Professional HELP 78    *          SUBJECTS COVERED
*                                 *
*    (c) Europress Software       *        Reserve     (line  13)
*                                 *        Listbank    (line  35)
*       Ronnie Simpson            *        Erase       (line  45)
**********************************         Start       (line  57)
                                           Length      (line  65)
                                           Load/Save   (line  75)
```



```
Edit-Help_74.Amos
                     SUBJECTS COVERED

                     Sam Play (line  12)
                     Sam Bank (line  42)

Edit Help_78.Amos
*    AMOS Professional HELP 78    *          SUBJECTS COVERED
*                                 *
*    (c) Europress Software       *        Amos To Back  (line 11)
*                                 *        Amos To Front (line 20)
*       Ronnie Simpson            *        Amos Here     (line 27)
**********************************         Amos Lock     (line 37)
                                           Amos Unlock   (line 45)
                                           System calls  (line 53)

-------------------------------------
'Amos To Back
-------------------------------------
'hide AMOS Pro. from view

'This instruction is used without parameters and will hide AMOS Professional
'from view and allow multi-tasking from the workbench or Cli, giving the
'same effect as pressing Amiga+A.

-------------------------------------
'Amos To Front
-------------------------------------
```

The changes to Amos aren't purely cosmetic, but nobody would deny that the main menu has been substantially improved. As well as an icon bar for often used commands, options are also now available from the pull-down menus, bringing the editor more into line with other Amiga development software. The menus are even user-configureable so you can add your own functions as and when you need them. Overall this gives the power and ease of use expected of developments systems costing much more. Also available from the menu is the on-line help system which first appeared in Easy AMOS.

Score: 0
Lives:

GAMES CRAZY

Two productivity disks come with the package, both packed with AMOS games. These are a far cry from the awful *Magic Forest* and *AMOSteroids* titles that came with the original game. Wonderland is a full, eight-way scrolling platform romp, Super Blockout is an excellent Tetris clone and File Of Facts is a very useful database. These games really show what AMOS Pro can do. Can you do better?

been added, making the border look almost three-dimensional. Generally, everything is presented in a more straightforward fashion.

MENUS

Holding down the right mouse button reveals a menu bar containing almost four dozen options. This has enabled Europress to abandon the multi-screen icon bank of the first program. All the standard commands, such as running, testing, saving and loading, are present as well as an insert/overwrite toggle and a new button that inserts a blank line at the current cursor position.

The menu bar is divided into six categories and lets the programmer do everything, from loading and opening files, to examining procedures and creating macros. A User menu starts empty so that you can place programs and routines of your own devising into it. Have you written a printer driver or a mini-word processor you want to keep handy? Then place it here, and it'll become part of the AMOS system, always waiting when you load up. Handy or what?

A feature borrowed from other software is a system called Autosaving. How many times have you sat down for a few hours to begin writing the ultimate game only to have the computer bomb and realise you haven't saved in the last couple of hours. AMOS Pro displays a save prompt every half hour so there's little chance of making the same mistake.

When leaving AMOS, the program does an automatic save so that next time you load it up, you'll be able to jump straight back in. This feature works best when AMOS is running from a hard drive, but it's extremely useful nonetheless.

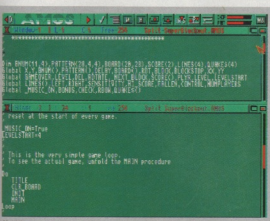
HIDING IN THE SHADOWS

One thing I disliked about AMOS was the fact only two programs could be loaded into memory at once, and then only one could be displayed at a time. AMOS Pro allows as many programs to run as memory permits, and up to 16 can be on screen at once. They are stacked in a similar fashion to Workbench screens, and can be scrolled up or down. Just in case the screen should get too cluttered, it's possible to push them into the main menu with the 'Hide' icon. This removes them from the screen and displays them in the menu bar, from where they can be run without ever displaying the listing!

MULTI-WINDOWS

When working on a long listing, I always found it extremely irritating moving back and forth, checking links and making corrections left, right and centre. AMOS Pro contains two new features to do away with such shenanigans. The first is the inclusion of user-definable reference points. By setting these using the pull-down menu, the programmer can 'mark' specific parts of a listing, and then jump back to them at any point simply by pressing a key. Needless to say, this can be a godsend in the small hours. If that isn't enough, how about an option to edit various parts of a listing at once? That's possible, too, by creating multiple windows on screen, all viewing the same listing. Theoretically, there are an infinite number of windows available, memory permitting of course.

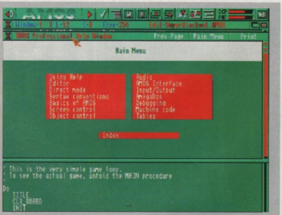
Another feature that should make editing a little easier is the Macro system. A Macro is a small set of characters that the computer stores and then enters for you at the touch of a button. If you have a program that often requires a repetitive sequence of instructions, you can record the instructions as a



```
 ***********************************************

Dim BNUM(11,4),PATTERN(28,4,4),BOARD(28,28),SCORE(2),LINES(4),QUAKES(4)
Global X,Y,BNUM(),PATTERN(),DELAY,BOARD(),ROT,BLOCK,BLOCKSTOP,XX,YY
Global GAMEOVER,LEVEL,DEL,ROTATE, NEXT_BLOCK,SCORE(),PLYR,LEVEL,LEVELSTART
Global LINES(),LEFT,RIGHT,SENSITIVITY,HI_SCORE,FALLEN,CONTROL,NUMPLAYERS
Global _MUSIC_ON,BONUS,CHECK,RBOW,QUAKES()
```

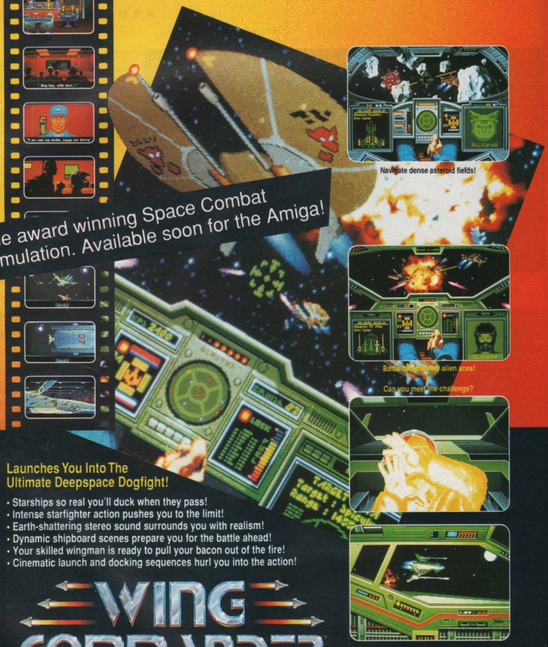
```
' reset at the start of every game.

_MUSIC_ON=True
LEVELSTART=4
'

' This is the very simple game loop.
' To see the actual game, unfold the MAIN procedure
'
Do
   TITLE
   CLR_BOARD
   INIT
   MAIN
Loop
```

Multiple document windows mean you can edit the same program in two places at once or even cut and paste between two entirely different files.



```
' This is the very simple game loop.
' To see the actual game, unfold the MAIN procedure
'
Do
   TITLE
   CLR_BOARD
   INIT
```

The help facility first appeared in Easy AMOS but has been included for the professionals too.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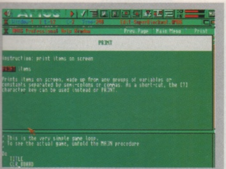
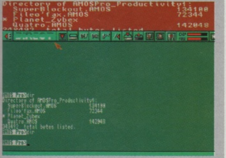
AMOS professional



```
PRINT

instruction: print items on screen

PRINT items

Prints items on screen, made up from any groups of variables or
constants separated by semi-colons or commas. As a short-cut, the [?]
character key can be used instead or PRINT.

' This is the very simple game loop.
' To see the actual game, unfold the MAIN procedure
'
Do
   TITLE
   CLR_BOARD
```

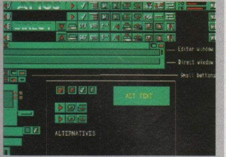
One of the numerous help entries, this one explains the Print function.



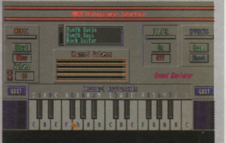
```
Directory of AMOSPro_Productivity1:
  SuperBlockout.AMOS                    134188
  Fileo'fax.AMOS                         72344
* Planet_Zybex
  Quatro.AMOS                           142048
```

```
AMOS Pro>dir
Directory of AMOSPro_Productivity1:
  SuperBlockout.AMOS          134188
  Fileo'fax.AMOS               72344
* Planet_Zybex
  Quatro.AMOS                 142048
348492  total bytes listed.
AMOS Pro>dir

AMOS Pro>
```

The new Direct Mode. Note the increase in size making it easier to understand what's going on.



The resource bank contains all the basic building blocks needed for the *interface* construction language.



The Ronnie Simpson *Sound Explorer* was written with *interface.*

Macro, assigning them their own key combinations. Like almost everything else in AMOS Pro, the Macros can be saved out and used as many times as you like.

HELP ME!

One of the biggest selling-points behind Easy AMOS was the on-line help system, allowing the user to browse through the different commands and their meanings, or find out the exact syntax of what you wanted to use. In AMOS Pro, the system has been given a massive overhaul and is presented as a complete manual on disk, available at any time by merely pressing the help button. Pressing help gives one of two responses, depending on the location of the cursor. If it's at the start of a word, AMOS Help will display the full instructions of the word, with all syntax and a couple of examples. If the cursor is anywhere else, a menu will appear letting you check up on any part of the AMOS Pro system.

The most impressive feature of the new editor is that if there is any part of it you don't like, it can be changed. The entire system can be tailored to suit, from the colours of the menus to the various sounds the program creates – even the style of requester boxes and the system messages that appear. All this is done from a configuration program found on one of the menu bars, and once everything has been set up, it can be saved and will remain as set until a change is required.

The direct mode is an area in which instructions are tested without affecting the program, to see if they actually work. This has been revamped and now contains a row of icons along the top and one or two nifty little tricks. The direct window is much larger than before, and you can choose whether any printing commands appear on the main screen or in the window.

The icons replace the familiar set of commands, and each of the ten has two sub-commands, chosen by the left or right mouse button. There are no surprises here as clicking brings up the current directory, opens the file selector or closes the current screen. On top of this, AMOS Pro's direct mode can remember the last 20 commands entered, and by using the up and down cursor keys, any of these can be selected.

An interesting aspect of Easy AMOS was an unbelievably handy programming aid which allowed the user to run a program on a small screen and watch the listing run at the same time. Thankfully, this has been incorporated into AMOS Pro, so debugging is now a hell of a lot easier. You can run programs at one of three different speeds, whilst watching your program scroll by in a small window in the middle of the screen. Immediately above that is a bank of icons that control the monitor and a tiny screen that shows the program. At the bottom of the screen is another window that shows exactly what the current line is doing and what effects it has. For example, if the line is in the middle of a For...Next loop, this window will display the current count.

That's the new improved environment out of the way, now let's talk about the improvements to the language itself. AMOS Basic has gone through numerous changes over the last few years, but none so drastic as this. Easy AMOS had 350 commands. AMOS had 500. AMOS Pro has a staggering 750 plus commands! So what has been added, I hear you cry!

TALK TO SOMEBODY!

For a start, there are now comprehensive commands for the serial, parallel and printer ports, allowing you to write programs that interact with outside peripherals. On top of that, AMOS now supports AREXX fully, enabling the user to interact with previously written scripts and even generate new ones. AMOS Pro is most certainly geared towards the professional user.

The original AMOS had very limited access to machine code, the excuse being that as AMOS already accessed most of the power the Amiga had to offer, there wasn't really much call for it. Of course, we know that simply isn't true, and things like polygon generation can be written to run much faster in machine code than in BASIC, but how can these routines be incorporated? Well, what if AMOS Pro enables the programmer to drop blocks of machine code into a listing as closed procedures and that what if these can be accessed by jumping to the procedure as normal. If that doesn't interest you, I don't know what will.

The bob and sprite handling routines have been enhanced, with a lot more commands to cut out

THE HISTORY OF AMOS

In April 1989, the programming of AMOS began in earnest. Two years earlier, STOS (the Atari ST version) had been released in France to rave reviews. In the months after its release, people started to get into the Amiga, and so AMOS was born. Programming was stopped temporarily in March 1990 when Francois Lionet was drafted into military service. However, he persevered, and on June 12th of the same year, AMOS v1.1 was released to almost unanimous praise.

The following September saw the release of AMOS V1.2, a streamlined version correcting some bugs. In that same month, work began on the most sought after AMOS utility, the AMOS Compiler. The compiler, along with V1.3, was launched in June 1991. The month after that, AMOS 3D was released. This allowed people to build virtual reality games within the AMOS framework. At the same time, plans were being drawn up for a beginners version – Easy AMOS which was released earlier this year.

In March 1992, work proper began on a super variant of AMOS. Easy AMOS contained some new features that stunned regular AMOS users, such as on-line help facilities and a monitor that allowed you to watch your program in action. They wanted some of that for themselves, and so these features were incorporated into AMOS Pro along with some new and impressive features.

➤

AMOS professional

THE MAN BEHIND IT ALL...

Francois Lionet is fast-talking, frantic, funny and French. We caught up with him at his home in Lyons to find out some more of what AMOS is all about...

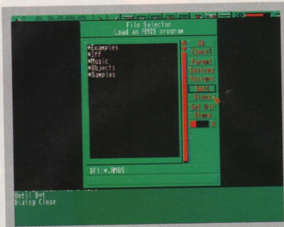
'I originally wrote STOS because all I could afford was an ST. Amigas were far too expensive. Once I had released STOS, I began to hear a lot of good things about the Amiga and eventually temptation got the better of me and I bought one.

'When I tried to program it, I was lost. Code on a multi-tasking system was a nightmare. I had to fight with the machine for a couple of months before we could agree on how things should be done. The Amiga is like a cat – if you don't stroke it in the direction of the fur, it gets very upset.

'When I started writing AMOS, I didn't want to make the same mistakes as STOS. STOS was horribly structured, with everything needing line numbers and so on. In fact, I had to rewrite about 90% of STOS to turn it into AMOS. (Editor's Note: The original AMOS manual wasn't quite so well written. It was basically copied from the STOS manual, and contains the one mistake that has caused more people to contact a software house than anything else – the command LLIST, which allegedly lets you print out your listing. This command was never in AMOS!

'The feedback on AMOS was amazingly good. It was the first language that allowed people to make a sound with one instruction or move a sprite easily. I finished AMOS just after starting military service, and ended up programming it on a portable PC anywhere I could. Next time you get stuck with a command, remember it might have been written on the toilet!

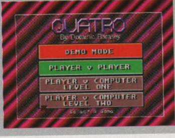
'Easy AMOS was the idea of Chris Payne (Ex-Europress Software boss). He wanted to do a cut-down version for people who wanted to learn how to program. I thought it would be easy. In fact, the only easy bit was removing the unwanted instructions. Incorporating the help system and the monitor options was a nightmare and a lot of hard work. But I'm happy with it!



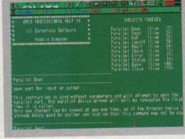
```
File Selector
Load an AMOS program

*Examples
*Iff
*Music
*Objects
*Samples

DF1:*.AMOS
```

```
Until D=1
Dialog Close
```

Left: File requestors have been tidyed up a bit, but they're still not quite up to ARP standard. Included in this version of AMOS is a handy utility to create your own.



Below: The standard of the example programs given away with the package has improved dramatically.



```
AMOS PROFESSIONAL HELP 01
(c) Europress Software
Ronnie Simpson

SUBJECTS COVERED
Parallel Open
Parallel Send
Parallel Out
Parallel Input$
Parallel Abort
Parallel Check
Parallel Error
Parallel Status
Parallel Base
Parallel Close

Parallel Open

open port for input or output

This instruction is used without parameters and will attempt to open the
parallel port, the parallel device driver will will be requested the first
time it is called.
Only one channel can be opened at any one time, so if the Printer Device i
already being used by another application then this command may not be use

Parallel Send
```

Below left: Just one of the 80 tutorial programs which outline exactly what each command does and how to use it.

much of the boring and repetitive tasks. For example, it's now a lot easier to clear all the bobs at once, as well as being able to check collisions between all bobs and all sprites at a stroke.

INTERFACE

The big new addition, however, is Interface. Interface is AMOS' interpretation of Intuition, a built-in graphics system the Amiga uses for Workbench. Interface is used to build-up dialogue boxes, requester windows, and generally complete screens with the minimum of fuss. The main editor screen is built with Interface and shows how easy it is to use. Basically, there is a screen of graphics called a resource bank. This comprises single units, such as box corners and different styles of line. Using a building block process, these objects are placed together to create complete screens, buttons, boxes, alert messages, etc.

Interface takes a little getting used to, but once you've got it sussed, it's very much easier than using the windows system from the original AMOS. Interface boxes are completely temporary so never overwrite the backdrop.

On the sound front, AMOS Pro still possesses the same AMOS music routines, along with a couple of new, professional features. Easy AMOS let you run Noisetracker modules if required and AMOS Pro goes one step further and lets you play Med modules on top of everything else. Previously, you would have needed to use a conversion program which would often damage the sound quality, leaving clipped samples. By using the new Track Load and Track Play commands, music sounds exactly as it did when first performed.

Another addition is the ability to play IFF animation files – the sort of thing created on Deluxe Paint in compressed mode or MovieSetter. In AMOS, they run faster and smoother than the original packages they were created in. Animations can be created within AMOS, but it's better to use a good art package and then jazz them up in AMOS.

The last addition is a file called '101 Procedures'. Since the original AMOS was released, Europress asked users to send in any interesting routines they may have programmed, such as single line scrolling or bobs routines. On the Examples disk are dozens of little free routines to do all those jobs you can't be bothered to write.. There are at least 80 of them on one disk.

FAULTLESS

AMOS Pro is nearly faultless. It has been designed as a version of Basic for people who really want to get something out of their Amiga, and attempts to do this in a very user-friendly environment with some excellent on-line support. This it does without fail. Amos Pro is everything I hoped it would be and more – an essential purchase.

THE FUTURE

What's coming next? Well, the first product to appear will be the AMOS Pro Compiler. This will load into the main program and so run from the menu bar rather than as a separate utility. We should see that early next year, followed by the AMOS Pro Interface Designer, a stand-alone utility for building-up interface systems. And, of course, there'll be regular update disks...

AMOS PRO

...at a glance

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A 600 HD NOW ONLY	£429.99
A 600 2Mb	£314.99
A 600 HD 2Mb	£469.99

A 600 RAM EXPANSION

FEATURES INCLUDE: - Trapdoor installation Will not invalidate your warranty • Battery backed real time clock • Long life lithium cell • Enable/disable facility • Full installation instructions • Made in U.K. • Complete with famous Phoenix 2 year warranty.

Phoenix PA 601-populated-1Mb	£44.99
Phoenix PA 601-unpopulated-0Mb	£24.99
Phoenix A 600 ROM Sharer	£29.99

Keyboard switchable!

PHOENIX AMIGA Power Pack

When purchasing any Amiga you can also buy our unbelievable value PHOENIX POWER PACK, which includes over **£100** of quality software and accessories. Probably the best bundle around, just look at what you get!

SOFTWARE

Man Utd Europe • Kick Off 2 • Captive
Rick Dangerous • Pro Tennis Tour 2

ACCESSORIES

Fully Microswitched Joystick
50 Capacity 3.5" Disk Box
8mm Mouse mat • 10 Phoenix Branded Disks with Labels

Phoenix Power Pack	£39.99

AMIGA 1500

2.04 Workbench Includes: Deluxe Paint 3, Platinum Works, Home Accounts, Toki, Puzznic, x Elf, Amiga Format Book and Joystick

AMIGA 1500 ONLY	£539.99

AMIGA 1500 + 1084 SDI

This *SPECIAL OFFER* combines both the A1500 (as shown above) and the legendary Commodore 1084 SDI Monitor.

AMIGA 1500+1084 SDI	£729.99

Limited Stocks Only!

EMULATORS-A 500

GVP PC-286 16MHz	£239.99
Vortex A Tonce Plus 286 (16MHz)	£214.99
KCS Powerboard (with DOS 4.01)	£199.99
KCS Powerboard	£184.99
KCS adaptor for 1500/2000 ONLY	£59.99

MONITORS

PHILIPS 8833Mk II ONLY	£194.99

Colour Stereo Monitor now including **'Lotus Turbo Challenge'**, and 1 years on-site warranty.

COMMODORE 1085 SDI	£216.99
COMMODORE 1084 SDI	£199.99

All monitors are supplied with a FREE cable for connection to your Amiga.

MONITOR ACCESSORIES-

14" Dust covers	£4.99
14" Tilt & Swivel stand	£13.99
Anti-Glare filter screen	£19.99
A4 Copy Holder	£12.99

HARD DRIVES A500

GVP IMPACT SERIES II Hard Drives, the fastest Hard Drive/Controller for the Amiga. Features Game Switch, external SCISI port, FAAASTROM SCISI Driver, GVP's custom VLSI chip and internal RAM expansion up to 8 meg! Units use high specification fast-access QUANTUM Hard Drives coming with **2 yr. guarantee.**

A500-HD8+ 52 Mb (Unpopulated)	£329.99
A500-HD8+ 120 Mb (Unpopulated)	£424.99
A500-HD8+ 240 Mb (Unpopulated)	£689.99

ROCTEC

PRICE CRASH!!!!

Roctec "Rochard" hard drives now at unbelievably low prices!!

ROCTEC 40 MB	£259.99
ROCTEC 60 MB	£294.99
ROCTEC 80 MB	£329.99
ROCTEC 120 MB	£364.99

Featuring Quantum/Connor drives-very fast access times-(19ms or better) • expand up to 8 Mb using 1 Mb Simms only • 1 year guarantee • slimline design ideally colour matched to the A500.

ROCTEC (controlletr Only)	£164.99

Very similar in style and appearance to the GVP HD8+ but unpopulated and without a hard drive so you can fit your own. Please specify IDE orSCISI.

EXTRA MEMORY-Only £25.99 when bought with drive!

HARD DRIVES 1500/2000

Series II Hard Disk Controller/RAM card	£114.99
Series II 52 Mb Hard Disk and RAM card	£269.99
Series II 120 Mb Hard Disk and RAM card	£399.99
Series II 240 Mb Hard Disk and RAM card	£639.99

EXTRA MEMORY-Only £25.99 when bought with drive!

ACCELERATORS A500

GVP COMBINATION ACCELERATORS & HARD DRIVES-The ultimate expansion product for the Amiga 500!

A530 Combi 40MHz + 52Mb Hard Drive	£659.99
A530 Combi 40MHz + 120Mb Hard Drive	£757.99
A530 Combi 40MHz + 240Mb Hard Drive	£979.99
A530 68882 Co-Processor	£204.99

ACCELERATORS 1500/2000

GVP G-Force 030-25MHz + 1Mb	£545.99
GVP G-Force 030-40MHz + 4Mb	£784.99
GVP G-Force 030-50MHz + 4Mb	£1099.99

ACCELERATOR RAM Modules

1Mb Simm-32 Bit 60 Nanoseconds	£65.99
4Mb Simm-32 Bit 60 Nanoseconds	£182.99

PHOENIX A500 Plus

2 Meg RAM Upgrade Modules

A PHOENIX RAM module can expand your chip RAM up to 2 Mb by using the trapdoor expansion port. Extra RAM is necessary to unleash the incredible graphics capabilities of your Amiga. All our boards carry a full 2 year no quibble replacement guarantee. **It's never been cheaper to upgrade!**

1 Mb Fully populated RAM board.... NOW ONLY	£34.99
1 Mb unpopulated RAM board	£16.99

PRINTERS

STAR-

LC-100 Colour NEW!	£159.99

9 PIN colour printer with paper parking, eight fonts and electronic DIP switches.

LC24-100 NEW!	£189.99

24 PIN with compressed data mode, 16 K buffer and 10 letter quality fonts,(with Star printer driver only).

LC-20	£134.99
LC-200 Colour	£195.99
LC24-20	£199.99
LC24-200 Mono	£219.99
LC24-200 Colour	£268.99
XB24-200 Colour	£379.99
SJ48 Bubblejet	£229.99

Star printers come with one year warranty.

CITIZEN-

Swift 240 Colour NEW!	£279.99
Swift 240 Mono NEW!	£259.99
Swift 200 Colour NEW!	£219.99
Swift 9 Colour SPECIAL OFFER	£179.99
224 mono	£214.99
224 Colour NOW ONLY	£229.99
Swift 24e Colour NOW ONLY	£269.99

Citizen printers come with 2 year warranty.

HEWLETT PACKARD-

Deskjet 500 SPECIAL OFFER	£339.99
Deskjet-500 Colour	£559.99

HP printers come with 3 year warranty.

HP black ink cartridge	£24.99
HP colour ink cartridge	£29.99

AUTO SHEET FEEDERS-

STAR LC20	£57.99
STAR LC200	£59.99
STAR LC24-200	£62.99
STAR LC24-20	£62.99
STAR SJ48	£49.99

PHOENIX PRINTER PACK-

Supplied with **ALL** printers containing 1.8m std. printer cable, printer ribbons/cartridge and 250 sheets of paper absolutely **FREE**.

PRINTER ACCESSORIES-

We have a large range of **high quality** printer accessories for all the printers we sell including: **dust covers from £2.99 • Ink cartridges from £13.99 • Mono ribbons from £3.50 • Colour ribbons from £7.99 • Printer stands from £7.99**

CALL 0532-311932 FOR MORE DETAILS!

CHIPS

AMIGA CUSTOM CHIPS

Kickstart 2.04 ROM	£34.99
Kickstart 1.3 ROM	£27.99
NEW Super Denise	£34.99
Fatter Agnus 8372A	£34.99
CIA 8520A	£9.99

MEMORY CHIPS

4 Mb x 9 (-70) Simm	£98.99
1 Mb x 9 (-80) Simm	£27.99
256k x 9 (-80) Simm	£12.99
256k x 4 DRAM	£3.49
1 Mb x 4 (-80) Zip	*£34.99
256k x 4 (-80) Zip	*£29.99
1 Mb x 1 DRAM	£3.49

*This price is for 1 Mb of RAM

These chips cover practically every popular memory expansion or Hard Drive system on the market for the Amiga ie. GVP, SUPRA, MICROBOTICS, COMMODORE

RING OUR TECHNICAL HELPLINE IF YOU NEED ADVICE

MEMORY EXPANSION

SUPRA 500RX the ultimate in Fast Ram expansion units. *(*Uses 256x4 Zips)*

8 Mb pop to 1 Mb*	£99.99
8 Mb pop to 2 Mb*	£124.99
8 Mb pop to 2 Mb	£149.99
8 Mb pop to 4 Mb	£209.99
8 Mb pop to 8 Mb	£309.99

DISK DRIVES

All drives feature super slim design, enable-disable switch, thru port and come with a **1 year replacement guarantee!**

Phoenix Deluxe Drive	£47.99
Roctec Roclite NEW!	£57.99

This famous drive has now been upgraded to include Anticlick and Virus Checker

Replacement A 500 Internal Drive	£39.99
Disk head cleaner	£3.99

VIDEO

The first col. digitiser for **under £100** from **ROMBO.**

VIDI-AMIGA 12 ONLY	£89.99
ROCGEN Plus	£129.99

ROCKEY BY ROCTEC-Chroma key unit

Embed live video in graphics!

Phoenix Price	£269.99

PHOENIX will be at the Future Entertainment Show Nov 5-8th Earls Court. Be sure to come and see us there and take advantage of some incredible show bargains!

ACCESSORIES

Zy-Fi Stereo speakers....................£37.99
Superb sound and excellent dynamics. These two-way stereo speakers are an Amiga standard-**Excellent companions on any gaming soiree!**

Control Centre....................£34.99
Heavy duty construction,rubber edging, perfect colour match, makes an ideal workstation for the A500/A600

DATA SWITCHES-*(25 pin D type)*

2 way	£15.99
3 way	£17.99
4 way	£19.99

STORAGE:

90 Capacity BANX	£11.99
150 Capacity POSSO	£16.99
Disk Box 10 Cap	£1.99
Disk Box 25 Cap	£2.99
Disk Box 50 Cap	£4.99
Disk Box 100 Cap	£6.99
Disk Box 120 Cap	£7.99

> *"Thanks once again for your efficient service and patient advice."*
> **S. Ward~ Norfolk**

PHOENIX PRODUCTS

MOUSE/JOYSTICK SWITCH....................£13.99
Don't damage your Amiga's ports! This device saves wear and tear makes switchover ***FAST***, and does **NOT** require power unlike many others.

COMPUTER/VIDEO SCART SWITCH....£19.99
Flip between Video/computer signals at the push of a button.

AMIGA MUSIC

Attention all you music lovers! Phoenix have put together an unbeatable music deal for you this summer.

MUSIC-X Jnr....only £15.00
When purchasing either a Phoenix Stereo Sampler or Pro Midi 2 Interface
Please Note: this is a limited offer only while stocks last!

STEREO SAMPLER......... NOW ONLY **£29.99**
Combines ease of use with state of the art analogue to digital conversion technology.(inc. **FREE** sample editing software +audio lead)

PRO-MIDI 2 INTERFACE....................£24.99
This fully featured professional quality midi interface is very flexible giving semi-patch bay facilities. It has five ports in, out, thru and two switchable out/thru. (inc. **FREE** midi lead)

GVP DIGITAL SOUND STUDIO..........£54.99
High quality sound sampler for all Amiga Computers
Amiga Music Made Easy-Only from Phoenix!

SOFTWARE

WORD PROCESSING / DTP

Kindwords 3	£36.99
Interword	£29.99
Final Copy 2 NEW!	£66.99
Professional Page 3 NEW!	£129.99
Saxon Publisher NEW!	£189.99
Pagestream v2.2	£126.99
Pagestream Font pack 1	£44.99
Page Setter 2	£46.99
Pen Pal 1.4	£57.99
Prowrite v3.X	£57.99
Quickwrite	£36.99
Transwrite	£29.99
Wordworth	£79.99
Hot Links	£52.99

INTEGRATED PACKAGES

Gold Disc Office	£59.99
Mini Office NEW!	£39.99

CAD & DRAWING

Design Works	£53.99
Professional Draw 3 SPECIAL OFFER	£79.99
Intro CAD Plus	£74.99
X CAD 2000	£99.99
X CAD 3000	£269.99

UTILITIES

A-Talk 3	£44.99
Cross Dos v5 *(inc, Cross PC Emulator)*	£29.99
Cross Dos	£22.99
Diskmaster 2	£43.99
Dos 2 Dos	£29.99
Opus Directory	£29.99
Xcopy	£36.99
Quarter Back	£45.99
Quarter Back Tools Vs 5	£49.99

DATABASE

Superbase Pro 4	£164.99
Superbase Pers 2 NOW ONLY	£39.99

VIDEO PRODUCTION/TITLING

SCALA 500	£79.99
SCALA Professional	£219.99
Big Alternative Scroller	£35.99
Broadcast Titler 2	£179.99
Font Pack 1 for Broadcast Titler 2	£88.99
Font Enhancer for Broadcast Titler 2	£88.99
Pro Video Post	£168.99
TV Show Pro	£51.99
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FRACTAL AND SPECIAL FX

Race Trace NEW!	£93.99
Deluxe Paint 4	£63.99
Deluxe Video 3	£71.99
Image Finder	£44.99
Pixmate	£43.99
Scenery Animator	£62.99
Vista	£43.99
Pro Vista	£71.99

ANIMATION

Take 2	£42.99
Image Master	£129.99
3-D Images	£36.99
Amos	£36.99
Amos Compiler	£21.99
Amos 3D	£25.99
Easy Amos	£22.99
Deluxe Paint 4	£63.99
Director v2	£71.99
Imagine v2 NOW ONLY	£189.99
Map master for Imagine	£59.99
Presentation Master	£169.99
Surface Master for Imagine	£29.99
Showmaker	£142.99
Video Director	£107.99

PRESENTATION & SLIDE SHOW

Can Do v1.6 NEW!	£72.99
Art Department Pro v.1	£143.99
Art Department Pro Conv. Kit	£57.99
Can Do It V.I.G	£94.99
Hyper Book	£44.99

ACCOUNTING

Personal Finance NEW!	£29.99
Arena Accounts	£83.99
Home Accounts 2	£39.99
System 3	£43.99
Cashbook Combo	£57.99

MICE & TRACKBALLS

NAKSHA Upgrade Mouse (With Operation Stealth, mat & holder)	£24.99
Roctec Mouse	£13.99

GOLDEN IMAGE

Mega Mouse (Has just recieved 90% Amiga Format Gold Award)	£12.99
Optical Mouse High precision, pointing device.	£29.99
Crystal Trackball	£37.99
Infrared-Cordless-Mouse... NEW! (Rechargeable top selling innovation.)	£47.99
Optical Pen Mouse NEW!	£39.99
High Quality 8mm mouse Mats	£3.99

SCANNERS

Powerful image processing tools for the office or the home enviroment.

POWER-**Features include:** 100-400 dpi • 64-Greyscales Thruport to printer • **FREE** Editing software.

Power Scanner v2.0	£94.99
Power Scanner Colour	£234.99

GOLDEN IMAGE-**Hand Scanner Series**
Features: 400 dpi • 256-Greyscale • Touch up and Merge it software.

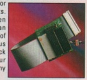
AlfaScan	£124.99
AlfaScan Plus	£149.99
AlfaScan OCR *(inc OCR Software)*	£279.99

EPSON GT-6000 FLAT BED FULL COLOUR SCANNER-Plug into Amiga parallel port, 600 d.p.i. resoloution, up to 16 million colours
Phoenix Price....................£989.00

ASDG-SOFTWARE-Scanning software comes in two forms, integrated into art development as a new module or used as a stand-alone programme.
Phoenix Price....................£109.99

PHOENIX Kickstart ROM Sharer

Because some older games and business software will not run on the new Kickstart 2.04 ROM. PHOENIX have designed a sharer for both ROM chip sets. Switchable between 1.3 and 2.04 you can get all the benefits of the latest A500 Plus without the drawback of losing all your old software. Fits any Amiga 500/1500/2000.



*Kickstart ROM Sharer	£24.99
*Kickstart Rev 3/5 ROM Sharer	£27.99
*Keyboard Switchable ROM Sharer	£34.99
Kickstart 1.3 ROM	£29.99
Kickstart 2.04 ROM	£34.99

*(ROM Chips not included)

AMIGA RELEASE 2

Now Only..

£79.99

The popular upgrade kit for 1.2 / 1.3 owners from Commodore is in stock and selling fast!

TRAIL BLAZERS-WHAT'S NEW IN OCTOBER 1992!

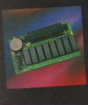
In this month's "TRAIL BLAZERS" section we spotlight some of the best newer products and peripherals currently available for the Amiga.

ROCTEC ROCLITE

This famous super slim drive has now been upgraded to include Anti-click and virus checker - THE SECOND DRIVE THAT IS SECOND TO NONE

Phoenix price.........£57.99

PHOENIX 1Mb A600 UPGRADE



Simply the Best !

...£44.99

CD ROM DRIVE-A570

This essential add-on has finally arrived, suitable for A500/A500+, A570.

Phoenix price.........£339.99

STAR LC-100 COLOUR

9 PIN colour printer with paper parking, eight fonts and electronic DIP switches.

Phoenix price.........£159.99

A600 SMART CARDS

Utilise the advanced technology of the A600 Smart Card Expansion slot with these NEW RAM Expansion Cards direct from Phoenix. Available in 2 Mb & 4 Mb cofigurations.

PA 6020-2 Mb	£119.99
PA 6040-4 Mb	£149.99

LEADS & CABLES

Phoenix supply connecting cables in any con-figuration, call sales for a complete list and prices.

Midi-Midi 2m	£3.99
Midi-Midi 3m	£4.99
Midi-Midi 5m	£5.99
Amiga-Scart	£9.99
*Amiga-RGB	£9.99
Joystick ext	£4.99
Joystick splitte	£4.99
*Serial/Modem	£9.99
Printer 1.8m	£5.99
Printer 2.0m HQ	£7.99

DISKS

Don't confuse these quality disks with others currently available. 3.5" 100% certified error free 70% clip. All disks include **FREE** high quality Phoenix labels.

10	£4.99	200	£72.99
25	£12.99	500	£174.99
50	£22.99	750	£259.99
100	£39.99	1000	£339.99

TDK Branded disks- High performance media from the experts-box 10 with labels.

10	£5.99	100	£52.99
50	£26.99	500	£249.99

1000 Phoenix Disk Labels....................£9.99

CALL OUR ORDER HOTLINE NOW!....

- Free Fast UK delivery
- Next-day Courier only £4.50
- Same-day despatch on Credit card orders/bankers draft/building society cheque/Postal orders
- All prices include VAT

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Please make cheques payable to PHOENIX. Allow 5 working days for cheque clearance. Call our despatch line for details on our full range of delivery options both in the UK and overseas. BFPO welcome. OPENING TIMES: Mon-Sat 9.00am-6.00pm E&O.E.

THE CD

If you don't understand exactly what multimedia is all about there is no need for alarm, especially given the fact that the computer industry is having trouble defining it to any degree of accuracy. In fact a large percentage of the stand space at the Multimedia '92 show was devoted to applications which were no more than graphics or video applications.

Skirting around the areas of what exactly is and what isn't multimedia, we are going to take a look at the technology behind the concept of multimedia, the mass-storage medium that gave it life – CDs.

PHILIPS
16-BIT
SEGA
MEGA-CD
Commodore
CDTV

REVOLUTION

CD WHAT?

You could be forgiven for thinking that a CD was just a CD and until a few years ago you would have been right. Unfortunately, as time wears on people are forever coming up with new ideas and mucking up a perfectly simple system. Many machines are capable of dealing with more than one of these formats, but what exactly do all those initials mean?

CD-ROM is the now generic term for a way of storing computer data on disc. As those of you with sound samplers will know, the amount of storage space required for even a few seconds of digitised sound is quite ridiculous. If you were to use a 16-bit sample, and sample at rates of up to 44Khz in stereo you would need even more space. This works to your advantage when it comes to CDs. The amount of storage space for an entire music album is colossal, and yet it all fits on a CD. Over 600Mb of digital data can be squashed onto a silver beer-mat, data which could just as well be pictures, text or applications software.

There is a standard format for storing data on CD, called ISO 9660, which means that any 'intelligent' CD machine will be able to access the data on them. This doesn't mean that, for example, if you had a PC version of WordStar on disc that you could run it on your Amiga – you can access the binary data but that doesn't mean that the program will necessarily run on your machine, in the same way that if you have a program that can read PC floppies on your Amiga that doesn't mean you can run PC software from them.

It does mean that data is transferable though, so pictures, structured fonts and certain sounds should be usable across all machines.

CD+G, or CD and graphics, is nothing more that an enhancement to ordinary music CDs. As well as the normal stereo sound there are two channels of graphics data encoded onto the CD. When replayed in a graphics capable CD machine (such as a CDTV, CD-i, Laserdisc or custom CD+G player) the graphic data is displayed via a TV screen. Because of the data transfer requirements for the audio channel, the graphics data is not relayed very quickly, and there is only a very simple protocol for transferring the data.

Basically, although a screen of about roughly the same resolution as an NTSC 16-colour lo-res Amiga screen can be displayed, it is addressed in a 'character block' fashion, meaning no smooth scrolling or wipe effects are possible.

Also, because of the speed of transfer, there is nothing like the data rate required for even rudimentary animation. Most of the CD+G music disks that have been released display lyric sheets and a few mono still images, or in the case of classical titles, the musical score and a bit of commentary. CD+G disks are not being released in large numbers not because it costs much more (anyone could knock out a CD+G track in a few evenings), but because few people have the equipment to play them on, and even if they did there isn't that much entertainment value in them anyway.

CD+MIDI is a similar sort of thing to CD+G, but instead of graphic data being broadcast on the extra channels, they are used to transfer MIDI instrument and sequencing data to the host CD player, which then (if it has a MIDI interface) relays the data to any instruments that are connected. Once again, this is an 'enhanced' CD, so you can still listen to just the music on a normal CD player, but you will need something like a CDTV or CD+MIDI player to access the extra data (which is one very good reason why the CDTV has built-in MIDI ports but an ordinary Amiga does not). Although potentially more useful than the CD+G standard, this medium has suffered a similar fate at the moment, but the technology is there, so the practice may be revived if the current crop of multimedia hopefuls catch on in a big enough way.

PhotoCD is a relatively new concept, promoted by Kodak. The idea is that instead of (or as well as) having your films developed at the local chemists and getting a load of easily damaged, flammable, creaseable, fingerprintable prints back, you could have them whacked straight onto CD. Armed with a suitable player you could then display Aunty Mavis picking her nose last Christmas on your TV set via a suitable player.

This scheme is not actually in operation yet, so it is impossible to say exactly how it will work on an everyday basis, or even what quality the results will be. The CD-i machines will support PhotoCD but, in spite of their now embarrassing remarks to the contrary, the CDTV unit in its present form will not.

Was his mind reeling and heaving
hallucinating fleeing what a loss

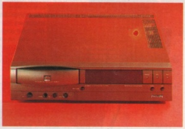
CD+G music disks are released at the rate of about two a month. Even Lou Reed has got in on the act, but it has to be said that few are any good.

THE PLAYERS

In the music world a CD player is a CD player is a CD player. Some of them may have 32x oversampling, infrared remote control and flashing lights, but to the consumer at the end of the day you put in your CD and music comes out of the speakers. Unfortunately the same doesn't hold true for the new generation of CD driven computers. They all adopt their software compatibility from the desktop machines that spawned them or, in the case of CD-i, are completely new machines.

That being the case we have compiled a special report on the players and some of the top-titles available for them. After all, if you don't have a player, you're not in the game.

CD-i



Philips's CD-i was not the first CD-ROM entertainment system on offer, but it currently has the most promised support. CD-i stands for Compact Disk Interactive and is exactly that. A normal CD player that has advanced graphic capabilities. The discs used are the standard CDs we've all come to know and will play on a normal hi-fi with CD capabilities. However, it's only when they are used with a CD-ROM machine that their true potential and content are released.

The CD quality audio is combined with video, text, animation and graphics with the promise of a Full Motion Video cartridge, incorporating the latest MPEG compression/decompression hardware, to be available by the end of 1992. This means that it will be possible to put music videos and interactive films on CD as well as fully animated interactive cartoon adventures the like of which we've never seen before.

The controller at least is better than the Commodore effort. With ergonomic styling and a joystick as well as selection buttons, it is much easier to use and feels more 'natural'. Already a large array of accessories are available including a roller ball especially designed for children to use, a track ball, joystick and mouse. There are also plans for a touch screen facility enabling the user to merely touch a point on their screen for the interaction to take place. As with most innovative products there's a substantial lack of software, but there is some available.

STEP FORWARD

into the world of microdeal MUSIC

SAMPLERS & SEQUENCERS EXPLAINED

SAMPLE: A sound that has been loaded into a computer and is represented by numbers (digital) rather than noises (analogue).

SAMPLER: Usually a small cartridge that allows you to take sounds from a microphone (with amplification), tape, CD etc and record (digitize) them into your computers memory. Once in the memory a sample (sound) can be changed using the sampling software.

SAMPLING SOFTWARE: Allows you to alter sounds that have been digitized by the SAMPLER. Normal functions with sampling software include loading and saving a sample disk, altering the sample by cutting, speeding up/down, fading in/out, joining to other samples and much much more.

SEQUENCER: Allows you to take samples and play them back in an order (sequence) that you determine. For example if you sampled a piano note, a sequencer would allow you to play that note back at different pitches and in a sequence you decide. Your one note loaded into a sequencer can become a complete piece of piano music.

MIDI INTERFACE: A small cartridge which plugs into your Amiga and allows a Midi instrument (usually a Keyboard) to communicate with the computer. If you already have a keyboard then you need to check that it has a Midi Port on it for it to work with a computer.

AMAS 2

Our top of the range sampler for the Amiga. Following in the footsteps of one of the best sound samplers ever produced comes the innovative AMAS 2. With even more features than the original Amas which was featured in the Paula Abdul music video 'Cold Hearted' this package is high in professionalism but low in price.

AMAS 2's features include software adjustable input volume controls, 3D display of sample frequencies, stereo oscilloscope, stereo spectrum analysers, 11 customisable special effects,full midi support with keyboard mapping, built-in midi interface with in/out/thru ports, microphone input port, Mono or Stereo editing with full suite of edit controls, plus much much more

SAMPLER WITH BUILT IN MIDI INTERFACE, SAMPLING SOFTWARE & MANUAL £99.95

QUARTET

This sophisticated sequencer allows you to take samples and sequence them into music. Imagine your samples as a band with QUARTET as the conductor, your band is composed of 16 instruments of which 4 can play at any one time.

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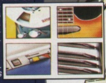

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ABC SPORTS GOLF: THE PALM SPRINGS OPEN

We could not start with a more awe inspiring piece of software and I suspect that this game will be responsible for selling more than 80% of CD-I players so far. It's always been said that a game of golf ruins a perfectly good walk, but *Palm Springs Open* is a disc will make that adage redundant.

The course has been painstakingly recreated and stuffed into the machine by the use of thousands of real photographs covering every angle and accounting for every conceivable situation. Superimposed upon the breathtaking locations and back drops from some of the most famous and beautiful holes in the world, your player stands as realistically as the blades of grass he's crushing underneath his feet.

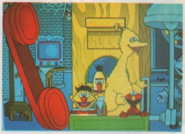
Every movement and swing of the club has been artificially composed from actual video footage of an amateur playing the holes. Every shot you take he acts out the emotions for you, perform badly on one hole and the camera will zoom in on his face and you can sit back and enjoy his reaction as he grimaces and hurls his club to the ground in frustration. On the other hand perform well and you're rewarded with an insert of video footage as your ball sails through the air and your golfer punches the heavens.

As if the graphics weren't enough, each shot you take or situation you find yourself in is commented upon by two TV sports reporters. They offer the kind of advice and viewpoint you've come to expect to hear from the TV professionals and it can often be invaluable. Land in a particularly nasty piece of rough and the duo might tell you which type of club to use or hint at you being really too deep to get away with a shot with your present iron. Not only do they provide advice, but they are also a formidable comedy act with the straight laced American providing all the lead ons for his smug and cheeky Aussie counterpart.

With all this incredible attention to detail and gobsmacking audio/visuals it would be easy to forget that there is a game in there too. You'll be pleased to know that it hasn't suffered either as all the normal options you've come to expect from such sims are in abundance. Granted it's not as in-depth as say *Microprose Golf*, but it's detailed enough to warrant serious attention. Amongst the adaptable and customisable options are the ability to choose your club, select the swing, chip, slice and aim your shots. You may also chose to practice on the more infamous holes like the Island green or skip the first nine holes to play the back end of the course.

Practice means perfect and the first time out you'll need about four hours to finish a round, playing on your own. One hole actually took me 32 shots to complete! Never before has the phrase 'It's just like actually being there' rung so true. The corny jokes issued by the American/Australian double act could wear a little thin after a month or so and there's no option to turn them off, but that's a small price to pay for such fascinating software. I'll keep coming back for more and so will you. I've yet to meet anyone who wasn't impressed by this game and it only scratches the surface of the machine's true potential.

A VISIT TO SESAME STREET-NUMBERS



A warning now to any parents who are contemplating buying a CD-I and haven't made their mind up yet because of the quite steep price, do not let your child play this disc in your presence or you will be forced to sell the car, house, family jewellry and, quite possibly, your in-laws to get it. *Sesame Street Numbers* is just one in a series of discs compiled in conjunction with the Children's Television Workshop and the Jim Henson Puppets of the same TV fame.

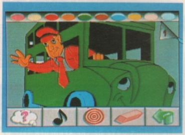
The other disc in the collection so far is *Letters*. Each disc contains about three continuous hours of learning entertainment for children of three years and upward. Quite literally it is a joy to watch children play with the games and puzzles as the instantly recognisable characters appear to speak to them and welcome them into their world.

Everyone's favourite characters are represented with Big Bird, Elmo, Mr. Snuffalupagus, Oscar and, of course, the fabulous Count. You can explore Bert and Ernie's house, play with radios and broadcast Sesame Street songs, play with objects such as telephones, televisions, clocks and toys or simply sit back and watch actual animated cartoons from the award winning series that will have you singing along with your children as the memories come flooding back.

There are literally scores of interactive objects to play with as well as tons of games and puzzles all presented with the Henson magical charm. All the characters read and talk to the children and can actually remember where they've been and what they said the last time they were in contact. One section will even make your child pick up a ringing telephone in order to deliver personal messages based on a previous contact with the character making the call. Quite literally the best educational software I have seen anywhere.

If you want to keep your children entertained and occupied during the holidays, or at any other time, then this is the disc for you. The TV series has won countless awards and now you can step inside that incredible show with an interactive disc that transcends the abilities and hopes that even the creators ever had for their episodes. Absolutely stunning, an essential buy.

CARTOON JUKEBOX



It's been a long time since I watched early morning children's TV, but when I did it used to be full of such small animated titles as those contained on *Cartoon Jukebox*. Primarily this disc is a sing-a-long venture with ten animated cartoon tales of popular ditties. However, each of the traditional songs has a twist and the results are often hysterical. For instance, 'Old McDonald' is shown as a poor down-trodden farmer whose hilarious animals run riot dropping up all over the place and causing havoc everywhere, far from the ordered and idyllic scenes I pictured as a child.

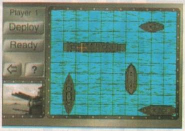
'Pop Goes The Weasel' is another classic tale that is given a Disneyesque touch by the cobbler's possessions coming to life and entering a world of fantasy and fable. There are over 50 pages of cartoons and what makes this disk extra special is the facility for your child to completely recolour every animation and see it come to life before their eyes.

TELL ME WHY 1

The first of two discs that are based on the best selling book series of the same name. The disc answers over 175 questions in five areas of interest that children might ask. The five subjects on this disc are Our World, How Things Work, The Zoo, How Things Began and the Human Body. Although they are quite informative, anyone old enough to operate the machine on their own will still be slightly curious as to some of the answers so don't expect to have a degree after watching the show.

The American presenter's voice can become quite irritating as well, but a good elementary introduction to a vast variety of topics such as how light bulbs and magnets work can be obtained from the series.

BATTLESHIPS



At first a visually disappointing adaptation of Milton Bradley's Battleships rescued from the sea of mediocrity by some quite stunning digitised video footage taken from the First World War. Player's moves and shots are interspersed with real video and sound of vessels doing combat in the Atlantic. The thunderous sounds of the long range cannons literally rock the room on half volume and bring a new air of atmosphere to the classic game. Either play against the computer, who does more than his fair share of cheating, or a friend and hear the splashes and explosions as the torpedoes hit or miss. There are three different firing methods to help things along and the winner is rewarded with his very own victory parade in glorious black and white. Ahh, the nostalgia of it, but it is a rather steep price to pay for just a simple game of battleships.

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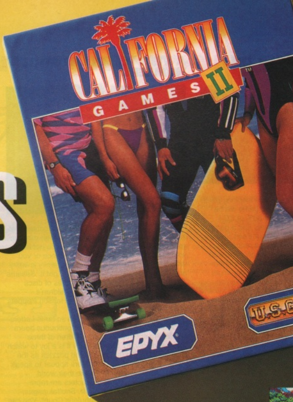
GRAB YOUR SHADES DUDES THE LAND OF SAND N SURF IS BACK



Yo dudes! Welcome back to California- the land of Fun and Games! - for California Games II, the ultimate sequel to the game that sold over 1.5 million copies worldwide.

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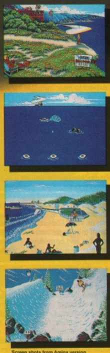

Screen shots from Amiga version

Screen shots are only intended to be illustrative of the gameplay and not the screen graphics which may vary considerably between different formats in quality and appearance and are subject to the computer's specifications.

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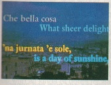
CLASSICAL JUKEBOX

No matter who you are or whatever walk of life you're from everyone likes some classical music. This disc not only attempts to widen your listening repertoire with some of the finest music ever written, but it also tries to educate you in the lives and times, trials and tribulations of the composers as well. *Classical Jukebox* lets the viewer read and listen about the colourful lives of 15 of the greatest composers who ever lived. The disk bathes you in their music whilst you read trivia on their lives, masterpieces and the times in which they lived. A better way of spending a quiet winter evening I can't imagine.

LUCIANO PAVAROTTI – O SOLE MIO

Bound to be a favourite with fans and karaoke singers alike. There's no better way to enjoy Pavarotti's work than to sit, listen and watch his music on a CD-I disc. Not only do you get 13 of his classic songs that can be played on a normal CD player, but also translations of all his lyrics and a discography of more than 20 of his albums.


Che bella cosa
What sheer delight
'na jurnata 'e sole,
is a day of sunshine

There is also an option to explore his life and works with an exclusive and especially prepared interview with the man himself. With this disc you will gain a deeper understanding of the musical artistry of the operatic legend that has been unrivalled outside traditional media circles.

RANDY MCNALLY'S AMERICA: UNITED STATES ATLAS

Rand McNally's
America
United States Atlas

The best way to describe this disc is an electronic travel atlas. *RMAUSA* brings the sights and sounds of America into your home. Users can choose any location in the US and be given a guided tour of its attractions and have highlighted information on the local population, industry, economy and people.

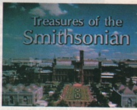
The disc can be used to plan a holiday or an extensive trip by keying in all the places you wish to visit and then being lead in sequence around them. Alternatively, you can experience the entire American dream by watching the whole thing from end to end. Fine, if you've got four hours to spare!

TIME LIFE PHOTOGRAPHY

CAMERAS
THEMES
WORKSHOP
DISC GUIDE
EXIT
People
Sports
Landscape
Art

Take the opportunity to meet and study the works of three leading photographers and attend a series of 25 interactive workshops covering every aspect of modern photographic technique. This CD-I title actually converts any television screen into a simulated camera which can be used to shoot practise pictures. More than 1000 photographs are featured, as well as invaluable information on the specific camera options and functions offered on the full range of 35mm cameras available today. It's possible to learn how to take perfect pictures by following the step by step narrative and examples and, although this wouldn't be a recommended disc for professionals, it gives a good grounding in the basic techniques for the ardent amateur enthusiast.

TREASURES OF THE SMITHSONIAN



Treasures Of The Smithsonian takes you on a guided tour of the 14 Smithsonian buildings, parks or galleries in America. The tour encapsulates over 200 of the American museum's greatest and most priceless exhibits, providing a font of valuable easily accessible information for anyone interested insuch topics as the history of aviation to the steam engine. Of the many options on the disc you may browse through any of the museums at will or embark on a guided tour.

It's even possible for you to walk around objects such as statues for extra scrutiny. A fascinating disk that's bound to be popular with other museums and schools alike.

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MEGA CD

16-BIT
MEGA-CD
SEGA

SOL-FEACE

The difference between *Sol-Feace* and all the other Megadrive shoot 'em ups is that, not only does this game have the usual space-balony shoot 'em storyline, it actually gives you an animated, couple-of-minutes-long intro to engage your enthusiasm further. The sequence shows our heroic star pilot and pilotess boarding their vessel, performing preflight checks, and streaking off into the galaxy to do battle over distant asteroids.

The reason you don't get *that* on your standard Megadrive shooter is that these memory-intensive graphic sequences are read direct from the CD. But don't think that's all the Mega-CD unit is capable of adding to a game.

One of the other features of the Mega-CD's graphics hardware is its ability to rotate sprites. As your *Sol-Feace* fighter zips across the game's six alien landscapes you'll witness robot claws on the ends of rotating armatures, giant androids which swing their arms through 360° and a bizarre mechanical spider with nasty, dangly legs, all of which look quite spectacular when you first see them.

Sol-Feace also uses the Mega-CD's PCM sound chip to produce some excellent effects, such as the sound of hydraulics when a huge satellite extends its metal vanes, and, curiously, some rather farty noises which pass for firing effects. Music is read from the CD, of course, and the tunes are suitably up-tempo and provide a good backing to the action.

The game itself is pretty standard fare – fly to the right of each level, blast the boss and start on the next planet – but at least the power-up system is innovative. You can bolt guns on to the top and bottom of the ship and aim them independently by swinging them through 45°. You can then mount different guns above, below and in the middle and thus use three different weapons at once.

Sol-Feace's other asset is that it's quite a fast blast which isn't too easy to complete (a bit of a rarity on the Megadrive these days). It's a shame that it didn't make more use of the Mega-CD's features, but then it was the first CD game to be released and programmers always seem to need time to fully get to grips with new machinery. There's definitely better stuff to come. A good, solid blast, but really nothing special.

PRINCE OF PERSIA

Now here's a game that couldn't fail. Jordan Mechner's Persian platform adventure has made it onto almost every conceivable format, and every version is an amazingly addictive game.

With that in mind, hopes were extremely high for the Mega-CD version. Okay, maybe there wasn't going to be room in the gameplay for sprite rotation and scaling, but all that CD space would surely mean loads more levels than the original's twelve (I mean, even the Super NES version had 20) and there was bound to be a new, orchestrated soundtrack for each level... Surely?

Alas, the Mega-CD *Prince of Persia* features no new levels, and only has a couple of tunes (good ones though) which back the action. There is, however, a cartoon intro which features an instant of sprite scaling, and the soundtrack on the title screen is superb.

The plot (escape from palace dungeons and kill evil Grand Vizier in one hour to save beloved princess from extinction) is the same as ever, as are those superbly animated, running, jumping, sword-fighting sprites. These are slightly more detailed than the Amiga version's, though the colours and styles of the backgrounds are similar.

The puzzles are as infuriating as those in every other version, and the controls are unusually dodgy until you get used to them (probably due to the fact that it's difficult to get directions accurately on a joypad). And yet, once you've started the game, and worked out the intricacies of the movements and the traps, there's absolutely no chance of quitting before the end of level twelve. I know I didn't, but then that's probably because the game can save twelve positions to the battery-backed memory in the Mega-CD unit.

With or without sprite rotation, this is a great game, though I'd be surprised if all this (minus the music, of course) couldn't have been fitted into an 8 megabit cartridge for use on the unexpanded Megadrive. Excellent, but does it need to be on CD?

considerably between different formats in quality and appearance and are subject to the computer's specifications.

CDTV

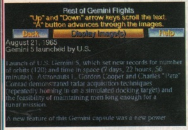
The CDTV was the first dedicated stand-alone CD system to reach the market. Unfortunately, although it has been on sale for quite a while it's still failed to clock up the numbers, with sales only barely into five figures. The launch of the A570 (and soon the A670 and the 2000/3000 version) should help to get more software developers interested which, so the plan goes, will develop into a spiral of more software -> more users -> more software.

At the moment things are looking up. There are lots of impressive pieces of software in development, including the stunning *Microcosm* from Psygnosis and the equally interesting *CDTV Football* being produced by Commodore themselves.

HEROIC AGE OF SPACE FLIGHT – NASA THE 25TH YEAR

This is the first in what promises to be a fantastic series of interactive compact discs from Troika. *NASA The 25th Year* runs for over 50 minutes and chronicles the American space teams epic struggle to conquer the stars over the last 25 years.

By using an extremely effective blend of real documentary video footage from old news reels and scores of easy to access menus, the disc allows you to sit back and watch the whole story of space flight unfold before your eyes. The CD is crammed full of information that can be located at a click of the remote buttons and called up in an instant or you can simply watch the entire 'movie' experience from start to finish.



Rest of Gemini Flights
"Up" and "Down" arrow keys scroll the text.
"A" button advances through the images.

August 21, 1965
Gemini 5 launched by U.S.

Launch of U.S. Gemini 5, which set new records for number of orbits (120) and time in space (7 days, 22 hours, 56 minutes). Astronauts L. Gordon Cooper and Charles "Pete" Conrad demonstrated radar acquisition techniques (repeatedly homing in on a simulated docking target) and the feasibility of maintaining men long enough for a lunar mission.

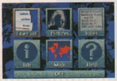
A new feature of this Gemini capsule was a new power

Every subject that's ever been covered by the national press is at your disposal not only to read about but to relive as you watch the actual film footage of the period roll by. You can watch and listen as presidents Kennedy and Eisenhower deliver their pro-space exploration speeches and actually feel the atmosphere and emotions of the thousands of people who attend the rallies in the early days before we took such technological advances for granted. New life is breathed into the historic first moon walk as you watch the incredible black and white film and listen to Neil Armstrong's well chosen words concerning mankind's huge leap which are as chilling as ever.

The 'video' screen is only a few inches high by four long but the detail is excellent, although some scenes are prone to show a slight bit of corruption around the edges on occasion. Lip sync to the footage is not as accurate as it could be in the future, but after all this isn't Full Motion Video yet. That being said the subject matter is so fascinating that all these minor points are easily forgotten as you get sucked further and further into the disc. There are loads of menus that can be divided into sub menus so you don't have to wade through the entire 50 minutes to find specific parts that you want to recap on and there's a great deal of information and reference material on the planets as well as the different craft that have made the voyages into space.

What you get with *NASA The 25th Year* is a permanent record of the earliest and latest stages of space exploration in one compact source. Anyone can dig out an encyclopaedia and read about the events contained on the disc but that's absolutely no substitute for experiencing the sights and sounds of the era on the screen. NASA is easily the most impressive piece of CD software I've yet come across on the CDTV and provides just a small glimpse of the machines real capabilities. I hope that there are a lot more to come and no home should be without this disc.

THE HUTCHINSON ENCYCLOPAEDIA



The Hutchinson Encyclopaedia's grounding lies in the books of the same name. The Hutchinson literary works have been gathering information from the four corners of the globe for over 40 years and now it's all been brought up to date and into the 21st century with this compact disc.

The silver platter contains over 25,000 separate items with over 2000 pictures and sound recordings from the BBC's archives. By simply clicking on the relevant icons you can call up literally thousands of bits of information whilst examining pictures and hearing any historic or relevant sounds that might accompany them. For instance, call up Jon McEnroe and you'll receive a brief, but concise account of his tennis career, recent and useful pictures of the man himself and also the option to listen to his infamous 'the ball was in' speech delivered to a Wimbledon Tournament referee in front of several thousand tennis fans.

All the information contained on the disc can be accessed via any number of menus and searching facilities. Although they are a bit slow at times they're considerably faster than the human hand and just about any topic can be located and brought before your eyes in under seven seconds. Apart from the audio, editorial and pictorial information there are a great many maps that can be utilised to find most destinations in the world or help out with that geography home work. There's no video, though, which is a shame but when you're trying to cram as much in on a disc as possible there have to be some casualties. Everything you'll find on the disc is totally cross referenced and when you have dragged your chosen topic to the surface, some arrows at the bottom of the screen will allow you to look at the previous page and the ones shown after. Alternatively there's a more traditional index that lists and locates every instance on the disc where the specific word you've chosen is used and then pulls them out for you to peruse at your leisure in succession.

Every one from Marilyn Monroe to Bruce Lee can be found, and everywhere from Burton-Upon-Trent to Wembley Stadium is described, making an invaluable referencing tool that the whole family can use easily and quickly. There's even the opportunity to connect your player to the TV and access the encyclopaedia whilst you're watching the television to see if it can throw any light on a problematic topic. Great stuff that's a lot of fun!

TRIVIAL PURSUIT

A rather comical representation of the popular board game. The rules are the same and simple enough. The first person to collect six different coloured wedges representing the six different categories of questions from around a multi-coloured board can make their way to the centre and have a go at answering the winning question.

This version adopts a haughty old bird to host the rounds and keep an eye out for any skull-duggery (cheating!). Each category of questions, geography, literature, history, etc. has its own representative who is introduced by the bird with a very humorous cartoon animation. Mae West deals out the entertainment questions and Christopher Columbus the geography to name but two.

The bird chips in with the odd quip and generally helps to keep things rolling in a light hearted manner and it all seems to work exceedingly well. You can cut through some of the trimming though so you don't get too bored with repetitive comments, but the best thing about *CD Trivial Pursuit* is that you can play it on your own. This game is even better than its original table top cousin. It'll take you ages to exhaust all the supplied questions and when the first disc runs dry there's another full one included in the package as a reserve. Excellent.

LEMMINGS

OUT 4
IN 00%
TIME

If you haven't heard about *Lemmings* by now you should go and look them up in The Hutchinson Encyclopaedia. If you do it'll probably say something like 'small furry nocturnal creatures with a mystifying lack off brain cells and a love of danger' which is more or less what their game counterparts are.

The idea behind the Psygnosis monster smash was for you to use your brain cells and the Lemmings constructive talents to guide a preset number of the critters out of harms way, over all potentially dangerous and obtrusive objects safely to the exit located somewhere on the other side of the screen. You'll be pleased, or displeased as the case may be, that the CD version is no different to the Amiga original right down to the sound effects.

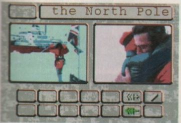
What you do get though, if you invest in this version, is not only one of the greatest games of all time, but a sneak preview of a future CD game in the pipeline called *Planetside* (now renamed *Microcosm*). Select the icon at the beginning of the program and you'll be treated to a fantastic animation of breathtaking speed and detail as a fighter skims over a planets surface chasing a drone. This demo has been out for ages and the game proper is progressing nicely having undergone major changes since this particular demo was put together. Hopefully, we'll be able to do a work in progress on Microcosm in the very near future. It's certainly worth looking forward to and the finished game will probably help flog several thousand CDTVs all by itself.

THE CONNOISSEUR – FINE ART COLLECTION

Now this is the sort of software Commodore were hoping would sell their CDTV baby to an entirely new consumer when it was first released. Immediately the CDTV was targeted at the older user, the sort of person who was into the quieter more relaxed things in life and not at all interested in those new fangled games thingamajigs. They were so desperate to attract this new consumer that they tried to pretend that essentially what everyone knew to be correct, i.e. that the CDTV is basically an Amiga in a box with a CD-ROM, was wrong. How quickly they changed their minds when sales didn't take off.

Anyway, with *The Connoisseur* you are able to enjoy over 400 works of fine art in your own home. The disc uses full colour pictures of the most famous paintings in the world and covers nine periods of art history from Classical Greece through to the 19th century Impressionists. The disc is topped up with all kinds of notes for each period, artist and painting and there's even some classical music covering the times thrown in for good measure. Not everyone's cup of tea and there's nothing here that you couldn't get out of a single book.

NORTH POLAR EXPEDITION



I have to admit, Sir Ranulph Fiennes is one of my all-time heroes. He belongs to the old school of British explorers when we could still hold our heads high in some areas of endeavour. If anything had been achieved that was remotely notable in the world you could be sure a Brit had a hand in it somewhere.

So it's with great distress that I opened up the rather large box that has since become this game's coffin. The basic idea is for you to guide a group of intrepid explorers along the very path that Mr Fiennes trekked all those years ago when he circumnavigated the world and made his epic journey to the North Pole. By simply answering a series of multiple choice questions at the beginning you are thrust into a tent at the beginning of your journey.

The game throws hazard after hazard at you as your tents catch fire and skiddos run out of petrol. By simply choosing the right response from a list of answers of what to do the computer determines your progress. This is dire and boring stuff indeed. The game isn't even saved by the use of actual photographs taken enroute during the original expedition.

This could have been an excellent interactive adventure, but it's not. If you want to experience the thrill of Sir Ranulph's adventure you're much better advised to sit down with a copy of his book To The Ends Of The Earth, which as it happens comes free with the game. Good reading..

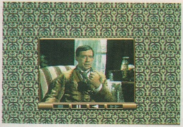
CD-ROM FOR THE IBM PC

The main use of CD technology on the PC at the moment is CD-ROM. Although the technology is still relatively new, there is quite a substantial software base already available for it, covering everything from games to business utilities. Multimedia PCs (or MPCs as they're being called) are starting to crop up everywhere and most of the major software houses are taking note.

Although the majority of games supporting CD-ROM are currently just shovelware – existing floppy-based games shoved onto a CD with no modifications – several companies are starting to test the water with CD-ROM specific titles. Virgin's imminent *The 7th Guest* is one such game, using full-motion video and digitised actors to create the illusion of walking around a haunted mansion. Ghosts hover in between tables, pictures ooze out of their frames, people wander around going slowly mad, all in Super-VGA video motion.

CD-ROM's only main drawback is that disc accessing time is still comparatively slow compared to conventional systems and in its present state it doesn't look like becoming a serious threat to replacing hard drives. It's getting better though and before long it wouldn't be too surprising to see CD-ROM drives becoming standard fittings for PCs.

SHERLOCK HOLMES CONSULTING DETECTIVE



The only thing really wrong with this digitised delight is that it doesn't have Jeremy Brett and Edward Hardwick as Holmes and Watson. What it does have, though, is around 90 minutes of full-motion video, three separate cases and awful English accents.

The first time you load up the game you are guaranteed to have a crowd around you. The animated casebook flips open and the master detective appears on the screen, nestling in his armchair and clutching his pipe, introducing you to the game. You'll tend to notice the occasional pauses while the disc accesses the next segment of video, but providing your machine is fast enough it isn't much of a problem.

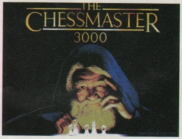
Each case starts off with a video clip setting the scene, from where you set off around London to eliminate the impossibilities and solve the crime. You can consult pages from the London Times, send your Baker Street Irregulars off to follow people or even call in on the blundering Inspector Lestrade. Each time you visit somewhere pertinent to the case, you are treated to another video segment. What's nice about it all is that the video isn't everything (although it's tempting just to keep watching and marvelling at it all). Clues can be gleaned from plenty of sources and, as with the real thing, it's extremely difficult to come up with the solution.

That's possibly its other problem: it can be a little frustrating for novice adventurers. Luckily, scenes can be replayed for those not quick enough to spot things first time round. The whole business of looking up files in your notebook, comparing them to information in the newspapers and sending off your irregulars to investigate is a good example of the other main use of CD-ROM, the ability to store lots of data and cross-reference it with ease.

As a game you may tend to find *Sherlock Holmes* a tad on the tricky side, but then it would be pointless to let you solve it all in a week. Despite this, *Sherlock Holmes* is an amazing product, both to play and to show off CD-ROM's capabilities. It's kind of fortunate that this product has arrived as early on in the CD-ROM's evolutionary stages as this, as it surely means that future products, both from ICOM Systems and others, will be even better. Just look at the floppy-based software industry for an example.

THE CHESSMASTER 3000

As chess games go, the Chessmaster series has always been one of the strongest names. The *Chessmaster 3000* was available before this multimedia version was produced, but unlike the crop of shovelware that dominates the market, The Software Toolworks has actually made some significant changes to take advantage of the technology.



The most notable of these changes are the audio files that are now used for analysing games, offering advice and teaching you the rules. For the 'Chessmaster' you get an elderly but wise sounding man, for errors and rules you are taught by a soothing, female voice.

Not only voices but graphics. Full 256-colour VGA is used to display the board and the pieces and 3D modelling is used to allow the play area to be placed in any rotation. You're also allowed to annotate your own games should you have the use of a microphone. The other main use of the CD is to store the data from classic games of chess and use them in the game, either to analyse or as a setup for a computer opponent. *Chessmaster 3000* quite simply has virtually anything the professional chess player can want.

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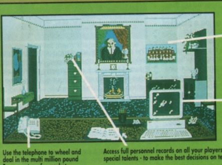

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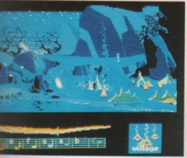
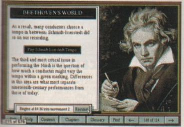
LOOM



Lucasfilm has been promising its fans CD-ROM games for some time now, so *Loom* is very much going to determine whether the American storytellers have got the right format or not. Quite frankly, I was never all that impressed by Loom and consider it to be a strange choice to launch its new series – surely one of the *Monkey Islands* or *Indy* adventures would have served as better guinea pigs?

The main selling point of *Loom CD-ROM* is that it's a 'talkie' (to quote Lucasfilm for a moment). There is now no text on the screen (unless the player actually wants some), with everything now being spoken to you by actors and actresses. Funnily enough, the original game came with an audio tape to act as a kind of introduction to the story, which was fine except that it wasn't very well done, the actors were all busy hamming it up no end and you couldn't help but laugh at it. Now this is what the whole game is like. Still, it is a good use of the technology and it shows that Lucasfilm are committed to giving the customer more than just shovelware. Personally though, I consider *Sherlock Holmes* (see before) to be more of an interactive film/story than *Loom*.

MULTIMEDIA BEETHOVEN



As a result, many conductors choose a tempo in between; Schmidt-Isserstedt did so on our recording.

The third and most critical issue in performing the Ninth is the question of how much a conductor might vary the tempo within a given marking. Differences in this area are what most separate nineteenth-century performances from those of today.

Begins at 04:36 into movement 2

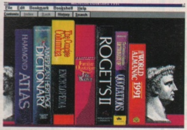
This is possibly one of the most perfect examples of what true multimedia is all about. *Multimedia Beethoven* is a complete reference guide to the great man's works and life, compiled by Robert Winter, music professor at UCLA (University College of Los Angeles). The multimedia aspect means that you can access and play his ninth symphony – both through CD-ROM and on a normal CD player – while looking through reams of text and illustration about the man and his music.

One of the more unique aspects of the software is the section on how to listen to Beethoven's works. Winter takes you through all the subtle nuances, the roles of the various instruments and the very concepts of his work.

It's this degree of education through entertainment that really makes the product special. Should unfamiliar terms crop up, call up the glossary. If you want to study while listening to the music, just press the button(s). *Multimedia Beethoven* is a true essential for the classical music fan that wants to understand more about the music he or she listens to. It's also a wonderful use of CD-ROM and can only bode well for other subjects wishing to make use of the technology.

MICROSOFT BOOKSHELF FOR WINDOWS

Microsoft



Described as an invaluable reference guide, Microsoft's compilation disc of the Hammond Atlas of the World, the Concise Columbia Encyclopaedia, the American Heritage Dictionary, Bartlett's Book of Quotations, Roget's II Thesaurus and Whittaker's Almanac 1991 is designed for Windows users wanting quick and easy access to a host of facts.

Quite simply you just click on the Bookshelf icon to open up the first menu – a nice graphical representation of a typical home library, complete with book-ends – then either select the book you need or use the Search function to find specific mentions of specific topics. Cross-referencing is as easy as asking it to find 'All mentions of General Custer except in the Encyclopaedia'.

The various books are all well represented, with animated illustrations, digitised graphics, sound effects, music and speech being used to clarify sections of the encyclopaedia, give examples of correct pronunciation and displays of famous musical scores.

If you have to find faults with it then look no further than its obvious American bias. Asking the dictionary for the pronunciation of the word route, it gave me 'ROWT', and asking the almanac to name the top 50 television shows of last year, we get the American charts. Still, little foibles aside, the *Bookshelf* is extremely handy for anyone that needs information at a touch of a button.

THE STATE OF PLAY

It is still a little early to tell what volume and quality of software will be released on the different machines. The CD-i has the advantage that developers have to start almost from scratch and they thus avoid the 'shovelware' trap, where developers just transfer floppy software to CD without making any enhancements. Unfortunately that means it will take longer before a consistent degree of programming competence is achieved.

Although the CD-i has greater promised support, it seems unlikely that Sony or JVC will jump in until Philips have tested the water. Meanwhile the quality of software on the CDTV has improved dramatically over the last few months and with the release of the A570 there is a greater potential market for developers to become interested in.

The MegaCD carries the console threat into the CD arena, and whilst not as high profile just yet it does have the might of SEGA behind it. Meanwhile the sale of IBM PC CD-ROM drives is unlikely to greatly detract from anyone else's chances – and vice-versa.

Make no mistake that the computer companies are beginning to see CD-ROM as some sort of holy grail – 'this is where the future is headed,' they have decided. Though, like penguins at the edge of an ice-floe, many are just waiting to see if the first brave few get eaten alive, they'll all end up jumping in eventually. While we await further developments, we'll be keeping you informed of all the new software titles that come out in the months ahead, with particular attention focused on Commodore's CDTV. Well, after all, we are an Amiga mag!

THANKS

This feature would not have been so impossible without the following people:

Steve Keen - CDTV and CD-i
Paul Glancey - Mega CD
Paul Presley - PC CD-ROM

Many thanks also to Sarah Auckland at Mathieu Thomas and Mike Weatherly of Westpoint creative for letting us play with expensive equipment.

SORRY

Well, we have to admit it, we got so carried away with compiling this feature that we just plain ran out of space. At the final count we were well over 12,000 words (about a fifth of a novel) so we decided that to do either of the obvious things – cut out some of the text or squeeze it all into seven pages) would leave you, our readers, with a bad deal. Instead we've decided to hold over the sections on making your own multimedia epic and the salutary tales from developers who already have mastered their own CDs until next month when we can give it the space it deserves.

We apologise for any inconvenience this has caused and promise not to try and attempt the impossible quite so often in future. We now return you to your normal magazine…

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E & OE

THE HISTORY *of* COMPUTERS

The year was 1986, an important milestone as far as every Amiga owner is concerned. Commodore launched the A1000 to much hoopla and critical acclaim and the battle with the Atari ST was on. Christina Erskine remembers it well...

PART 3

1986

AMIGA LAUNCH

Launch of the year in the UK was the long-awaited debut of the Commodore Amiga, shown at the Commodore Computer Show in May in its original A1000 configuration. Hard to recall that this beast would set you back a cool £1,696.25 at the time, and that Commodore was busy denying its potential as a games machine.

Feargal Sharkey shows off his amazingly good taste in reading matter – which is more than can be said about his music.

Meanwhile the rival 520ST was selling strongly at £800 (with a colour monitor) – Commodore had, in effect, given Atari another year's head start.

Just as significant in the long term, was Amstrad's decision to up-end the stuffy PC market with a range of IBM compatible machines at prices cheaper than much of the software available for them. Amstrad did not, however, conduct the low cost clone revolution all on its own. In fact, as component prices continued to fall sharply, the market was wide open for companies such as Spectrum with the Bondwell machines, Opus and Tandy to produce PCs at new low prices: between £600-£1,000.

PRICE FALL

Amstrad's PC1512s, starting at £469, were even cheaper. In addition, you could pick up a PC1512 from a High Street store such as Dixons rather than going through a specialist dealer, and Amstrad's high profile in the press ensured that for a while the word Amstrad meant 'low-cost business computer' in much the same way as 'Hoover' means vacuum cleaner.

The potential of the games console, back in a new and technically advanced form, raised its head with the arrival of the Sega Master System in the autumn. Other new machines were simply variations on a theme: Commodore added an in-built disk drive to the C128 and called it the C128D, and later in the year put the C64 into its familiar ivory casing; Amstrad added another 256K RAM and a second disk drive to the PCW; the Spectrum became the Spectrum 128 in February and the redesigned Plus 2 version came out in the autumn (see below); Atari produced a megabyte version of the ST, the 1040ST; Acorn upgraded the BBC standard at long last, bringing out the Master series.

SINCLAIR BUY-OUT

Alan Sugar buying out Sir Clive Sinclair was the sort of event that turns up in spoof predictions – in April 1986 it actually happened. No-one was surprised that Sinclair was being bought out following the Maxwell debacle the previous year. That it should be Amstrad, whose chairman Alan Sugar had been wont to refer to the Spectrum as a 'pregnant calculator', made it the story of the year.

Amstrad spent £5 million on the Sinclair name, its stock and the rights to its technology. Sinclair Research continued to exist, and Sir Clive, free from the encumbrance of debts and warehouses piled high with Spectrums and QLs, went on to form Cambridge Computers to develop portable computers (the Z88 came out a year later) and Anamartic to further research into waferscale integration. Amstrad dropped the QL like a stone and took just four months to put together the Plus 2, with its conventional keyboard and integral tape deck.

The Prestel hackers, Steve Gold and Robert Schifreen, made the news again when their case (see last month's installment) finally came to trial and the pair were found guilty of forgery. The fines totalled £1,350, the costs a further £2,000. Gold and Schifreen immediately appealed and the case ploughed back into the courts.

'ERE WE GO

In May, US Gold, software publisher with the Midas touch, slipped up. It had pulled off a coup in acquiring a computer games licence to the 1986 World Cup and all was set fair for a sure-fire number one game when the company discovered it was unable to get an original game based on the World Cup out in time.

Outwardly undaunted, the company went ahead with all the intended packaging – the badges, the scorecards, the posters – and in the absence of an original program included Artic's two-year-old *World Cup Soccer.* Which perhaps needn't have been a disaster in itself, but *World Cup Carnival* wasn't being billed as a re-release, and at £9.95, it wasn't priced as one.

Amstrad's moves to make PCs affordable may have delighted the masses but the company encountered

➤

CODE MASTERS FOUNDED: **October 1986. The Codies were set up by brothers David and Richard Darling and their father Jim, after a year of writing for Mastertronic. Prior to that David and Richard had written Vic 20 games under the name of Galactic Software while still at school.**

Code Masters publishes on the pile 'em high, sell 'em cheap basis, lots of titles, all at impulse buy prices. An extraordinary high profile PR campaign in 1988-89 by West End consultants Lynne Franks put the Darlings on TV and in the national press, making them one of the very few programming 'celebrities'.

First title: BMX Simulator. Best known title: Dizzy series of games.

WHERE ARE THEY NOW?

Ultimate Software were once the undisputed masters of Spectrum programming with hits such as *Sabre Wulf, Knight Lore* and *Alien 8.* The company dropped out of 8-bit programming shortly after being taken on by US Gold at the beginning of 1986. Leading Ultimate personnel set up a new company, RARE, to develop programs for Nintendo games consoles. Now have no links with the British market.

GAMES OF THE YEAR

***Uridium* was everyone's idea of the ultimate smooth scrolling shoot 'em up. *Starglider*, with its 3D graphics and fast scrolling, was one of the first games to demonstrate the potential of the 16-bit machines. Access's golf simulation, *Leaderboard*, was a firm favourite for its playability.**

SAYINGS OF THE YEAR

'If it's the difference between people buying the machine or not, I'll stick a bloody fan in it. And if they say they want bright pink spots on it I'll do that too. What's the use of me banging my head against a brick wall and saying, "You don't need the damn fan, sunshine"?' Alan Sugar, after the 1512 overheating controversy in 1986 (quoted in Financial Weekly, October 1, 1987)

staunch hostility in the corporate market. In a matter of weeks after the launch the word was going round that the PC1512 tended to overheat. Amstrad acted with characteristic swiftness. Alan Sugar called the rumours 'a pack of lies', apologies were sought (and obtained), and, in October, Amstrad reluctantly installed a cooling fan in the PC1512s, with chairman Alan Sugar making suitably belligerent remarks about the need for the fan in the first place.

1987

ARRIVALS AND DEPARTURES

The launch of the Amiga 500 and A2000 in March gave gamers a straight choice between the A500 and the 520ST as high specification leisure machines. Software houses buckled down to produce titles for the two, although Amiga buyers were often frustrated by publishers' tendency to develop games for the ST and for the Amiga version to be something of an afterthought. But then, at the time, some people were still sceptical about the Amiga 500: it was £100 more expensive than the ST, which by then had been on sale for 18 months.

Oh, how we laughed. Unearthed in one of our cabinets is this timeless picture of those Sensible lads being anyhting but.

The Spectrum that everyone had been waiting for, the Plus 3 with a built-in disk drive, duly appeared in May. And, a year after the Amstrad buy-out, we saw the fruits of Sir Clive's labours since then with the Z88, a laptop machine which had started life in another era as Pandora.

Amstrad enhanced its PC series with the launch of the PC1640, and a range of portable machines in the autumn. Atari introduced an up-market version of the ST standard, the Mega STs, and Commodore began its attempt to go back to its business roots with a range of PC compatibles.

ARCHIMEDES DEBUT

All these machines were widely expected and, with the possible exception of the Z88, held few surprises. It was left to Acorn, of all people, to provide the year's most sensational launch with the first Archimedes machines. The Archimedes 300 and 400 machines used Acorn's own RISC technology – and were something of a world-first at the price. They ran at a terrifying 4 mips (millions of instructions per second), it could display 256 colours from a palette of 4,096 at a screen resolution of 640x512, and the eight voice digital sound could play in glorious stereo.

ELECTRONIC ARTS FOUNDED

US: 1982; UK: April 1987

Trip Hawkins left his position as director of marketing at Apple Computers to set up Electronic Arts. The company aimed to produce products in the emerging entertainment and creativity market. Alongside games such as *Pinball Construction Set*, *MULE* and *Archon*, the paint, graphics, animation and music *Deluxe* series has, in its various incarnations, become a classic. The UK division of Electronic Arts was set up in 1987, publishing European-developed product as well as programs imported from the US.

First title: *Pinball Construction Set*

Most famous games: *John Madden, Populous.*

GAMES OF THE YEAR

***Universal Military Simulator*, from Rainbird, nailed the myth that wargames, however intelligent, had to appear onscreen as though they were progammed on a ZX81. Incentive's *Driller* proved that great leaps forward were still possible on 8-bit machines. *Nebulus*, from Hewson, was a highly original arcade-style game, well up to the company's usual standard. *Guild of Thieves* established that Magnetic Scrolls' *Pawn* was only the beginning.**

SAYINGS OF THE YEAR

'Pan Am takes good care of you. Marks & Spencer loves you. Securicor cares ... at Amstrad: we want your money'. Well-known Sugarism, quoted in Financial Weekly, October 1, 1987, and many others.

And just in case it wasn't abundantly clear that here was the ultimate games machine, David Braben had run up a little number called *Zarch* to demonstrate the Archimedes' mouth-watering capabilities. *Zarch* was a wonderfully smooth arcade game which made most ST and Amiga offerings of the time look rather silly, and to compound the insult, a rumour immediately hurtled round the industry that *Zarch* was just a few lines of Archimedes BASIC. It wasn't, of course, but it seemed one of the few adequate ways to explain the power of the machine.

The Archimedes-as-games-machine debate still rages. The main problem for the original 300s was that while £1,000 was a startlingly low price for a RISC machine, it was too high for a games micro. Secondly was the problem of support: games programmers were only just getting to grips with the possibilities of the Atari ST, and had scarcely begun to tap the resources of the Amiga's custom chips. That they would all be able to master RISC in their spare time was just too much to ask.

VIRUS KILLERS

Viruses hit the news for the first time in November, when Amiga owners were startled by the message 'Something wonderful has happened – your Amiga is alive'. A Virus Killer package was duly programmed and distributed. It all seemed like a nine day wonder ...

Now that PCs, such as Amstrad 1512s and 1640s, were going into the home, it became worthwhile for companies to start producing PC games software, or importing from the US, where the PC was outselling the ST and Amiga put together as a home machine. The UK, very slowly, began to catch up.

In July, Steve Gold and Robert Schifreen, now collectively known as the Prestel hackers, won their appeal against their conviction for forgery after breaking into Prestel mailboxes back in 1985. British Telecom decided to appeal against the appeal, and the case went to the House of Lords. The saga finally came to an end in 1988, after three years going through the courts, when the Law Lords ruled that the appeal which quashed Gold and Schifreen's convictions, should stand.

1988

AMIGA GROWTH

After the flurries of previous years, 1988 was a quiet one for new machines. The games market looked settled with the Amiga and ST battling it out for the high end market and the Spectrum, Commodore 64 and CPC taking care of 8-bits. The only unknown quantities were the much-predicted return of the consoles – particularly the rather puzzling fact that while Nintendo was flexing its muscles and cleaning up in Japan and the US, it was virtually invisible in the UK – and was there/wasn't there a boom in PC games?

In addressing the last question, Amstrad tripped up for the first time. At the same time as launching a set of PCs designed to give Amstrad its break in the corporate market, it also tacked on a 'home' PC, the Sinclair PC200. Demonstrated alongside the PC2000s, which had state of the art VGA graphic screens built in as standard, the chunky CGA display on the hapless PC200 showed up its main failing straightaway. Here we had a PC intended to play games (there were four US Gold titles bundled with it) and its graphics were already out of date. On the other hand the use of an integral 3" inch disk drive rather than a 5" inch version was ahead of its time.

Our revered Publisher shows off his entirely realistic hunchback impression. You too could have a body like this...if you drank 60 pints a week!

Altogether it was a most un-Amstrad like machine. To make matters worse, when supplies of the PC200 reached Comet, many were minus manuals, minus leads, minus operating system disks, etc. The PC200 got off to a bad start and never really recovered.

EAST ENDERS

Alan Sugar, chairman and founder of Amstrad and, if you believe the Amstrad image making machine, an East End barrow boy made good (although more reliable talk would have it that the man does possess three science A levels) was awarded an honorary degree by City University, London.

After seven years in which the price of chips fell consistently, a succession of measures taken in the USA to protect its own semi-conductor industry against the flood of low-cost chips from Japan led to component prices rising and a worldwide shortage of DRAM (dynamic memory) chips. Hardest hit were the low-cost PC clone manufacturers, with their large memory, low profit machines. Amstrad was forced to raise prices a couple of times during the year: Atari took the opportunity to put the ST back to £399. Only Commodore managed to remain aloof from this pricing see-saw.

And then, in June, Commodore finally brought the price of the Amiga down to £399.99, and sales of the machine took off at long last. Forthe first time the ST and Amiga were selling on equal terms. The ST had been selling at a standalone £299, but on hiking the price up to £399, Atari put the first of its multi-game bundles together, with 20 games in the box.

GAMES OF THE YEAR

***Robocop*, from Ocean, seemed just like any other film licence at the time. It went straight into the chart at number two at Christmas – few guessed it would still be there a year later. Mirrorsoft's *Tetris* was intriguingly developed in the Soviet Union, and proved to be one of the most addictive games of all time. *Dungeon Master* took the computerised D&D genre several steps further, while EA's flight/combat sim *Interceptor* combined solid 3D graphics with hair-raising aerial action. *Virus* was the ST and Amiga version of *Zarch*, the game which had wowed everyone at the Archimedes' launch.**

SAYINGS OF THE YEAR

'I believe people are smart, not dumb. If you can give people Rolls Royces for the price of Volkswagens, I'm sure they will buy them.' Jack Tramiel, interviewed at the CeBIT exhibition in Hanover, March 1988 about Atari's manufacturing policy.

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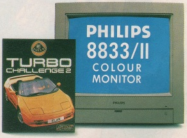

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93% and a game's worth a Superstar. We hardly throw them around, but if a game gets one it'll be completely outstanding.

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SCREENSTAR

first

ROME

MILLENNIUM

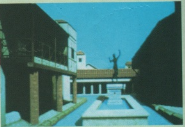
Imagine what it must have been like to be a Legionnaire, marching proudly through Rome, home of your superiors. Rome in the year 92AD was a seriously dangerous place, filled with feuding families and over-zealous soldiers. It was also a place of great scheming, full of people who wanted to get to the top. In Rome 92AD, you play one such person – a slave who would be emperor.

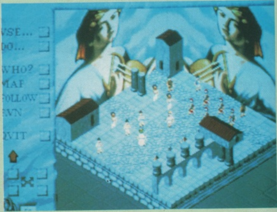
The game design was actually taken from a boardgame idea created by one of the top bods at Millennium late one evening, and since then the initial idea has grown into the huge, scrolling isometric adventure it is now.

One thing Millennium have tried to do is make the main character as flexible as possible. A bank of icons on the left of the screen give all the available commands – a list that changes as you move through the game. For example, if you are stood next to somebody, a button marked 'Speak' will appear, whereas if you stand next to the Roman baths at the start of the game, someone will remove their toga and dive into the water, at which point a 'Steal' icon will appear and you can run off with their clothes.

There are dozens of intelligent characters in the game, and they all interact with each other, carrying on their own lives as though you never existed.

Rome 92AD, will be out in October and should definitely be worth a look.



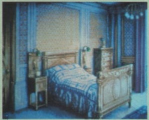


IMPRESSIONS

DAUGHTER OF SERPENTS

MILLENNIUM

Daughter of Serpents

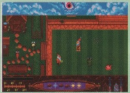


Daughter Of Serpents is unlike anything we've seen before. A graphic adventure on its lowest level, Serpents places you somewhere in Egypt in the 1920s, and is possibly the best-researched game ever. Programmed by Eldritch Games, known as perfectionists throughout the industry, the game so far manages to capture the 20's mood perfectly.

You choose one of four professions before beginning the adventure, and whichever one you choose greatly affects the way the adventure plays and is solved. For example, if you are an historian with an excellent knowledge of hieroglyphics, then you'll have no problem at all recognising the ancient magical teleportation capsule in the museum. If, however, you're a journalist with no knowledge of Arabic, you'll miss this part of the game completely.

The game has been designed to be as easy to play as possible, and like so many graphic adventures these days features an intelligent mouse pointer that changes when it passes over certain screen items. Conversation is held within speech bubbles, but apart from that there is no on-screen text..

The attention to detail is staggering. Everything about the town of Alexandria in the 20s has come straight out of history books. The hotel itself was drawn from a 1920 photograph of the Savoy in Alexandria. One story circulating is that Richard Edwards of Eldritch games was casting an eye over a couple of screens knocked up by graphics man Pete Lyon, and pointed at a lock on a door. 'That'll have to go. They didn't have locks like that then,' he said. With that sort of accuracy, this could be some game.



GNOME ALONE

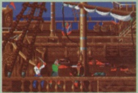
ICE

Dear oh dear, what a terrible title. Still, embarrassing monickers aside, *Gnome Alone* looks like it could be a fairly interesting product. You are a Gnome, and you have been imprisoned in the Garden of Mayhem. All you need to do to get your parole is keep the garden in order, and that involves a lot more than just sitting still with a fishing rod in your hands.

Standing between you and freedom are all sorts of extremely dangerous yet incredibly cute obstacles, such as bees just waiting to sting you, snails that make you cringe with disgust, worms that have to be destroyed before you can mow the lawn and flying fish, that just can't be contained in the pond no matter how you try. *Gnome Alone* looks like the unofficial follow up to Electronic Zoo's Magic Garden, but let's hope it's not quite as bad!

PIRACY

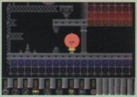
ICE



There have only ever been a couple of pirate role playing games, and as far as I can remember, they've all been rather good – particularly Sid Meier's *Pirates*. ICE are trying their hand at an RPG with *Piracy*, and at this stage it looks pretty good.

As captain of a pirate vessel, youl have to navigate the stormy seas, just trying to keep the ship afloat while enemy ships attack. If you like, you can board other ships looking for treasure, and where would any pirate game be if it didn't have the proverbial treasure islands dotted about here, there and everywhere? You'd better watch your step, though, or you could end up walking the plank.

Apparently, *Piracy* will introduce terms like 'scurvy', 'grog', 'plunder' and 'pillage' into games players' vocabularies. With any luck, it'll also introduce the phrase 'very playable game' too. Look out for a full review next issue.



CHUCK'S WORLD

FISSION SOFT

New games publisher, Fission Soft, have signed up the artistic talents of Steve Packer, the man responsible for the popular PD slideshows which feature the diminutive Chuck dressed up as various popular icons and involved in some decidedly silly pursuits. After our feature on Steve a couple of issues ago, he was bombarded with offers and decided to sign for the newly-formed Fission Soft after hearing of their plans for his character.

First game to appear from the Stamford-based publishing house will be *Chuck's World*, a cute platform game featuring the exploits of Steve's rotund character of the same name. It's the usual story of kidnapped girly held captive in an abandoned castle by a manic wizard. The twist in this particular tale, though, is that our hero is an abject coward. He's too scared to enter the castle, so instead slips into a number of dream worlds. These will include an Alien world where Chuck changes into an alien-slaying soldier, a Bat world where he dons the famous Batcape, Moonworld in which he becomes Flash Gordon and Superworld were he transforms into a Green Lantern-type character.

Fission Soft's second game, *Peroxide Girl*, is an altogether more bizarre affair. The game begins with an animated intro showing a rather drab looking secretary throwing her handbag to the floor, jumping into its cavernous insides, and reappearing as the mysterious Peroxide Girl. With a boufant that rivals that of Mari Wilson, its a race against time to prevent her impressive hairdo from turning a ghastly shade of brown. To help her in her all-important mission, peroxide test tubes are literally scattered about each level which, when collected, gradually transforms her hair back to its bright white brilliance.

Fission Soft have another three games in the works, all equally as peculiar and zany, and we'll have an extensive In Development as soon as there's more to see. The company is also on the look-out for experienced Amiga programmers, so if you feel

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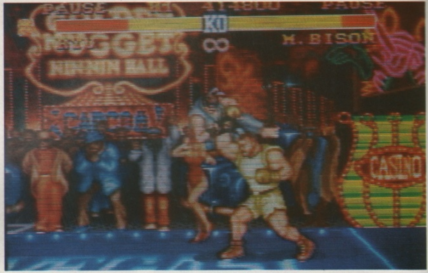


Balrog plants a 'dashing uppercut' on Ryu. His lack of kicks makes him an easy opponent to beat, especially if you use long-range attacks.

STREETF

In the build up to Christmas US Gold have acquired the licence to the hottest coin-op ever. CU Amiga went behind the scenes to see how *Streetfighter 2* is shaping up.

ARCADE HIT

If you're not the kind of person who arms themselves with 20ps and heads down their local arcade once in a while, the odds are you've never seen *Streetfighter 2.* This beat 'em up from Capcom is without doubt one of the most successful games of all time, spawning several clones, none of which match up to it, loads of merchandise, comic strips and, most recently, its own TV series in Japan.

Like most beat 'em ups the objective is simple. There are eight different characters to choose from, and with your selected guise you have to kick the other seven unconscious in best-of-three matches, then defeat four 'super' opponents to be declared the world's greatest streetfighter. While this format has proved limiting before, each character has lots of moves to master and combat requires precise timing which makes the game ferociously addictive.

The team with the monumental task of producing the conversion are Creative Materials, who were responsible for *Final Fight* – another Capcom conversion. The game only managed to rate 60% back in the September '91 issue, but the criticisms where levelled more at the game design rather than bad programming, citing a lack of moves and originality as the major flaws. Creative Materials are hoping to make amends with *Streetfighter 2* and have brought in Gordon Fong, whose previous projects include *Hoverblast* and *Arena*, to oversee the development of the Amiga version.

PAUSE
HI
ZANGIEF

Zangief's spinning pile-driver is the hardest move to learn.

One of the biggest problems facing Creative Materials is cramming the game onto an acceptable number of disks. The Super-NES cartridge is a massive 16 Megabits, which is roughly 2 Megabytes, making it one of the largest cartridge games ever. Most of the memory is taken up with the huge amounts of sprite data for each character. When you consider that every combatant is several sprites high and has around 15 moves, plus animations for when they're stunned, hit and knocked senseless, it's easy to see how that much memory is used.

On top of that there are 12 different backgrounds, each two screens long with objects that smash when a character falls onto them, sampled speech and a different tune for every screen. There are also three bonus rounds where a car has to be destroyed (a feature also present in *Final Fight*), a pile of bricks reduced to pebbles and oil drums smashed. Fans of the game will notice that the 'bricks' round has replaced the barrel smashing in the coin-op, which is a carry-over from the S-NES version.

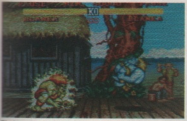
ANIMATION OVERLOAD

So far Creative Materials have managed to cram in an average of 223 unique frames of animation for each character, not including flipped sprites, with the total game currently taking up 2.5 meg. How many disks the game comes on depends on how well it compresses. It looks likely to be two or three and it will require at least a megabyte of RAM, as much of the game is downloaded into memory to cut out disk accessing.

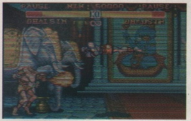
One feature which has had to be dropped is the parallax scrolling on the ground – including it would have lead to a drastic slow down. All the speech has made it through though, with sound maestro David Lowe sampling from the S-NES version and rewriting the music from scratch. Incidentally, a number of computer stores now stock Streetfighter 2 – the CD, which is a disk of the game music and sound effects.

MOVIN' ON UP

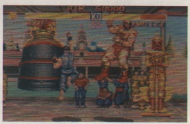
One of *Streetfighter*'s biggest attractions is the sheer number of moves. The coin-op has six buttons, three for soft, medium and hard punches and three for their kick equivalents. When you hit a hard or medium button your character will pull off one of two moves depending on how far away the opponent is, or throw them if they're close up. On top of that there are special moves, which



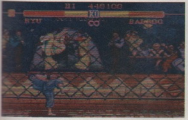
Blanka vs Blanka. The duplicate character feature wasn't present in the original coin-op so is something of a bonus on the Amiga.



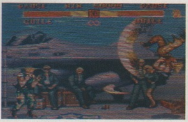
Dhalsim's special attacks include fireballs and a flying head-butt called a Yoga Head-spear.



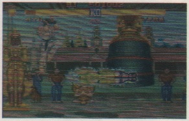
Ryu executes a dragon punch – the most devastating move in the game.



Vega, the guy with the claws, can climb up the fence in the background and drop onto his foe.



The backgrounds are two screens long, but the Amiga version will not have parallax scrolling.



Bison is the last character, although Vega is a tougher opponent to beat.

IGHTER 2

require a combination of joystick movements followed by a button press. The trickiest of these is Zangief's spinning pile-driver which is executed by, what else, spinning the stick then hitting punch.

Obviously, with the typical Amiga joystick only having one button, there is no possible way to convert all the moves. Instead you'll be able to either use the punches or kicks on the joystick and toggle between them by either pressing a key or waggling the stick. Some of the slower characters such as Honda and Zangief are automatically set-up with fast attacks otherwise they'd be murdered by their speedy opponents.

Problems are presented with this system, though. There's a tactic to stun an opponent a second time which requires a combination of hard and soft kicks and punches which is impossible with this system, also a certain amount of joystick waggling is called for to recover from a stunning blow or to escape a character who's crushing or chewing you.

The original plan was to include a six-button joypad with the game. Not only would this have given it much more appeal, but it would also have made it pirate proof. Unfortunately this plan had to be abandoned, presumably because of cost, as the cheapest commercially available joypads start at £9.99 and they only have three buttons. This decided lack of buttons could put many of the coin-op's fans off, after pumping so much cash into the machine only to find their devastating techniques unworkable in this version.

PUGILISTIC PASTS

The original *Streetfighter* appeared just over five years ago, and was nothing more than an average beat 'em up with large graphics, unless you went to an arcade with the punch button cabinet. This version featured three gigantic hit-sensitive buttons for each player. The strength with which you hit them determined how hard your on-screen character punched. While this was a novel idea, in the time it took to wind up a really good blow your computer opponent, who had no such worries, could step in and destroy you.

This, and the problems with playability (i.e. it was a bit easy), were rectified in *Streetfighter 2*. Although the game is almost three years old, it's more popular than ever. There are more opponents, more moves, more buttons and more strategy than the original and more skill is called for when dealing with the last four streetfighters. When you hit a character two or three times with heavy blows they become stunned giving you a free attack, and timing blows is essential.

Although there's no official word on *Streetfighter 3*, Capcom have produced *Streetfighter Championship Edition*. In this version the special attacks are even more ferocious, the last four opponents are selectable and both players can be the same characters. Although you won't be able to play the last four in the Amiga version, the twin-character mode is being included which will please fans of the game.

CONSOLE YOURSELF

The first home version of Streetfighter 2 was on the Super NES. It's currently only available on import, with the official version due out by Christmas. The game is an almost perfect conversion of the coin-op, featuring all the sampled sound effects, tunes, backdrops and characters and, surprisingly considering the machine's processor speed runs at a mere 3.5Mhz, no slow down.

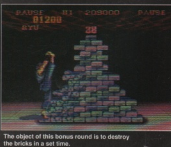
There are now rumours of a SEGA Mega-CD version of SF2, and if it does come around it will be the first major coin-op to CD conversion and could pave the way for for future big-name titles on all CD machines. What next? Streetfighter 2 CDTV?

THE SPECIALS

By far the best special move in the game is Ryu and Ken's dragon punch. This move, executed by pulling the joystick in the direction you're facing, down and down and towards the way you're facing and then hitting punch (phew), has to be executed very close to another character to hit them. It has the added bonus of rendering them invulnerable for a second, so it can be used defensively as well.

Ken, Guile and Ryu can hurl energy bolts across the screen with a simple flick of the stick. The speed it travels at depends on which of the three punch buttons was used to fire it, and this is another area where one button doesn't suffice. A neat tactic is to launch a fast fireball followed by a slow one. This often catches your opponent off guard, but will be impossible in the Amiga version.

One advantage the Amiga version will have is an autofire joystick. Chun Li, Blanka and Honda each have a special move which is activated by repeatedly tapping a button, and an autofire switch will make this even easier.



The object of this bonus round is to destroy the bricks in a set time.

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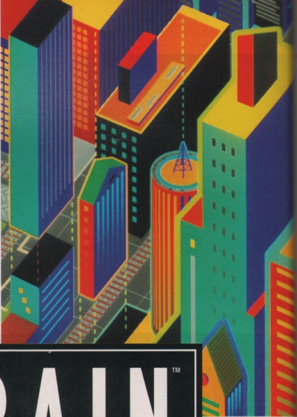

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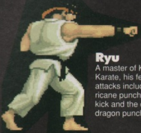
MEET THE HEROES

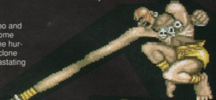
Streetfighter's eight selectable heroes all have different attacks, bar Ken and Ryu, and individual special moves. Characters like Blanka and Chun Li are relatively easy to master and are a good choice if you haven't played the game before. But they do have their limitations, so if you want to consistently beat your mates you're best off using someone like Guile or Ken whose varied moves are harder to learn but are far more damaging.

Each character has their own end sequence, which makes completing the game with different ones worth while, although the slower characters really come unstuck when they meet the lightening-fast Vega.



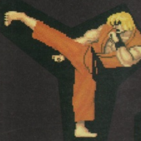
Ryu

A master of Kenpo and Karate, his fearsome attacks include the hurricane punch, cyclone kick and the devastating dragon punch.



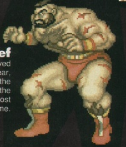
Dhalsim

This mysterious contestant uses his yoga abilities to contort his body and breath fire.



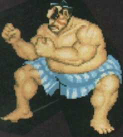
Ken

Like Ryu, Ken is a survivor from the first game. He has now moved to America to battle a greater variety of opponents.



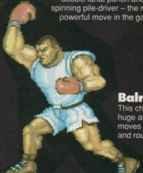
Zangief

Covered in scars he received during a fight with a bear, Zangief's arsenal includes the double lariat punch and the spinning pile-driver – the most powerful move in the game.



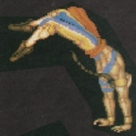
Honda

The fat boy of the game employs his sumo skills to crush his opponents. He flattens them with his flying torpedo and finishes them off with a hundred hand slaps.



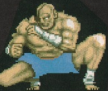
Balrog

This character has no kicks, only a huge array of punches. His special moves include the dashing upper-cut and round-house smash.



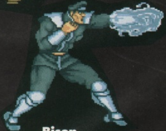
Vega

Although not the final character, Vega is the toughest in the game. Armed with a set of metal claws and a dazzling array of moves, including the Izna Drop, where he descends from the ceiling, picks up your character, and dumps them on their head.



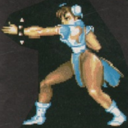
Sagat

He was the top guy in the original Streetfighter, but now he's playing second fiddle. He's armed with the Tiger upper-cut, which is similar to Ken and Ryu's Dragon Punch, and Tiger shot.



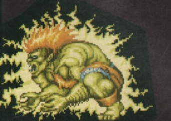
Bison

Equipped with mystical powers, Bison is quick and deadly. He's capable of three-hit moves which stun an opponent in seconds.



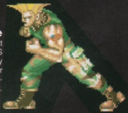
Chun Li

The only female participant, Chunners is fast and capable of performing the spinning bird kick and the hundred foot kick.



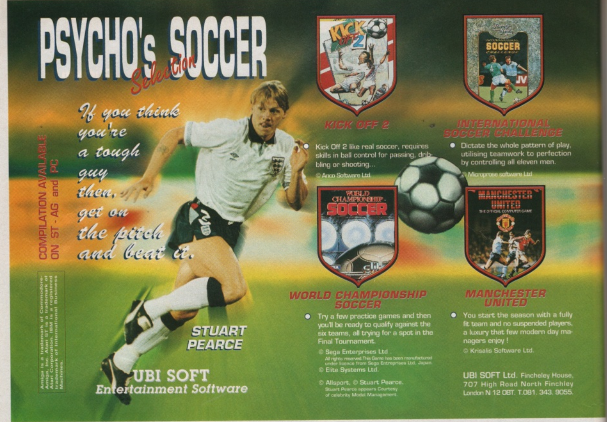
Blanka

Green, mean and capable of electrifying his skin, Blanka also enjoys chewing the head off his unfortunate opponent.



Guile

He became a master of combat karate while serving with the US airforce. He can hurl energy bolts, throw opponents in mid-air and destroy them with his somersault kick.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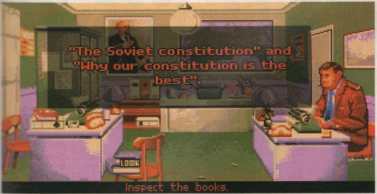

"The Soviet constitution" and "Why our constitution is the best".

Inspect the books.

KGB

WORK IN PROGRESS

A game based on the exploits of the Soviet ever-so Secret Service? John Mather got the thumb-screws out to get some further information.

NEW GAME French team Cryo are making quite a name for themselves in the original product stakes. First they come out with the wonderfully strange *Dune*, and now *KGB* – an everyday story of corruption and Vodka. You have been moved to Department P of the KGB, and your task is to investigate internal corruption and bring the conspirators to justice.

POINTING The game is played out over four missions, which of course get progressively harder. It's been in production for the last seventeen months, and at time of writing is looking seriously impressive. Apparently, the game idea was suggested by Martin Alper, boss of Virgin USA who bumped into Philippe Ullrich (musician and ideas man) at the US CES. Helper saw a KGB badge Philippe was wearing, pointed straight at it and said 'There's a good idea for a game'. It all stems from there!

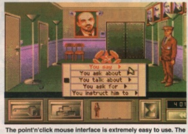
KGB will be played as a graphic adventure, with an intelligent mouse pointer used to do all your actions, such as examining objects and talking to people. Cryo are managing to get a lot in the game, and I mean a lot. So far there are over 50 minutes of music that may be put onto a CD, just like the *Dune* soundtrack. There are over 300 pages of text, 100 different locations and 120 different characters, all of whom can hold conversations.

TALKING POLITICS Conversations are, naturally, a very important part of the game. The easiest way to get information out of somebody is to ask them, and if they don't tell you first time, then apply the thumb screws and ask them again. When you engage in a chat, you are given a list of options, such as 'Talk to them about..' or 'Ask them for..'. Once you have selected the type of thing you want to say, you are given a selection of topics. Once you have been given your answer, you are given a multiple choice of responses to whatever it was the character said. Be careful not to give yourself away!

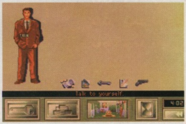
You'll be able to do most things a KGB agent can do, but in these enlightened days of pleasant East/West relations, it's all done completely tongue in cheek. Most of the characters are stereotypical, which makes the game look great fun to play, and there's an option to print out the story while you are playing. Hopefully, should you complete the game, you'll have a novel printed and ready to read. What a great idea!

Other new features include visual surveillance on people, full torture and thumbscrew options, plus a self-mapping section that allows you to move between any two locations by clicking on the map, rather like the system used in Magnetic Scrolls adventures.

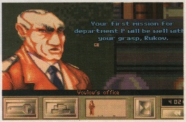
CRYOGENICS *KGB* is Cryo's second project for Virgin, and it looks like their best yet. With Exxos responsible for the sound, and the familiar French team of Fabrice Bernhard (coder), Michael Rho, Didier Bouchon and Sohor Ty (Graphics) behind it, it really should be something special. The last thing besides *Dune* that this team worked on that I can remember was the fabulous *Captain Blood*. Look out for the full review next month.



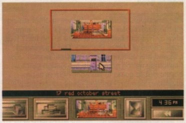
The point'n'click mouse interface is extremely easy to use. The multiple-choice questions and answers likewise.


Talk to yourself.

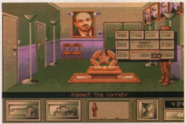
The inventory screen gives details of all that you carry. At first you'll only have a standard issue pistol, but later on....


Your first mission for
department P will be well with
your grasp, Rukov.

Each mission is preceeded with a briefing where some imortant information will be given to you. Listen carefully !



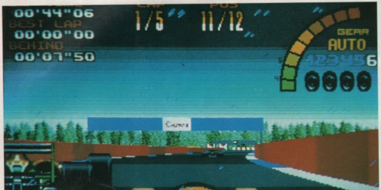
A self-mapping function automatically plots the locations you've visited, useful in a game this big.


Inspect the corridor.

If at first you don't succeed, try, try again. Events happen chronologically, but not always when you're snooping around.

With Nigel Mansell carrying off the Formula One World Championship, Gremlin must be hoping their new license will do equally as well. Tony Dillon goes for a test drive.

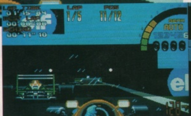
NIGEL MANSELL



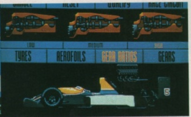
NOT ANOTHER RACING GAME?! Gremlin are racing mad. Not only have they released all the *Lotus* games, *Team Suzuki* and *Supercars*, now they've signed up the fastest moustache in motoring car racing to star in his own computer game. At a recent Gremlin open day, the Sheffield softcos took the lid of their newest racer to a select bunch of journos, including yours truly, and things are looking good.

ANOTHER RACE? So why yet another racing game? Aren't there enough of the pesky things already, without adding one more to the fold? It all reminds me of Monty Python's The Meaning of Life and the 'Just one more mint, sir' sketch. Just how many racing games are the Amiga games buying public going to stomach? Gremlin programmer, Damian Hibbard, takes up the story. '*Nigel Mansell* is designed as a cross between *Vroom* and *Formula One Grand Prix*. The kind of person who buys *Lotus* isn't automatically the sort of person to buy *Grand Prix*, so we're aiming to bring more of an arcade element to the genre.'

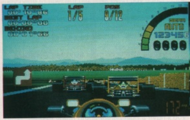
Does that mean we're just going to see *Lotus* with different graphics, then? 'No, not at all. Although the gameplay is arcade-orientated, rather like that of *Vroom*, the game itself is a lot more detailed. You race in a league of 16 other drivers, all of whom drive intelligently. You know the sort of thing: take proper racing lines through corners, brake on sharp bends. It'll be decidedly unlike other games of the genre where you have to take most corners at a snail's pace and watch the opposition speed past.' The supposed intelligence of the opposition is something Damian also feels the need to stress. 'The other cars in the game all drive competitively. They overtake aggressively, as well as trying to block you in should you try to overtake them. I'm also setting it up so that they will have to enter the pits as and when the racing conditions dictate. .'



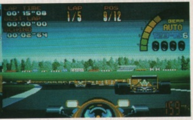
Nigel Mansell's promises to be the most detailed sprite racer ever. Check out the other cars!



A brief pitstop for the hero of the highways. Necessary in this game, especially with the unpredictable weather.



Racing from the starting grid. Your postion isn't too good, and you can be certain that the other cars aren't going to let you through.



You're cutting a good racing line. In any other game you'd fly past computer players, but here they all drive as well as you.

...KEEP FALLING ON MY HEAD... *Nigel Mansell's World Championship* has been in production since early February, and looks set to be completed roundabout the end of September. What other features can we look forward to? 'Dynamic weather, for one. Occasionally, the sky will darken, to create an overcast effect, and then the rain will pour down, lightly at first and then getting progressively heavier. One thing that took ages to perfect was to have a car in a tunnel and be able to see it raining outside, but we've done it.'

This is Damian's first project for Gremlin. What has he found to be the biggest obstacle so far? 'Basically just sorting out how to do what I wanted to do in the shortest possible time. I wasted a lot of time on stuff which was subsequently scrapped, but it's all running much smoother now.'

Damien is also working on a 'driving school' section, which will allow the player to race around any of the 16 tracks in increasingly more powerful cars. Eventually, you'll be let loose in a turbo-charged Formula One racing car and from there you'll progress to the actual races themselves.

Completing the threesome behind the project are Damon Godley on graphics and regular sonics expert Patrick Dhelan. All systems are ready to go, and the game should hit the shelves in time for November. We'll have a review as soon as we can get our racing gloves on.

TYRED OUT **Years ago, a revolutionary racing game called *Pitstop 2* was released. A bog-standard racer by today's standards, it was way ahead of its time, and heralded in a new era of racing car games. Gremlin are making the same kind of claims concerning *Nigel Mansell*, but we'll just have to wait and see if they can live up to such wild boasts.**

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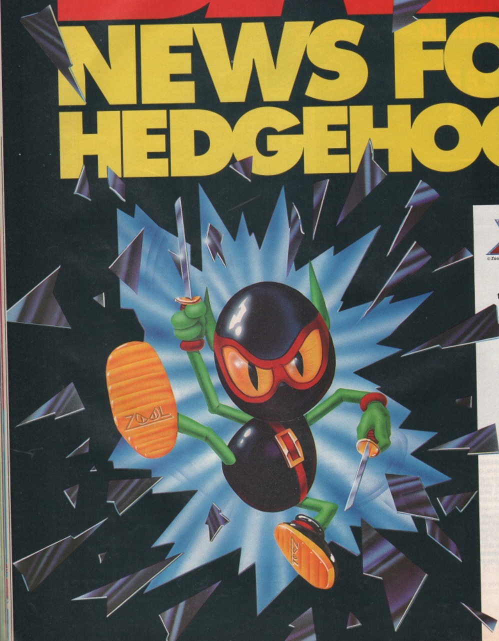
BAD NEWS FOR HEDGEHOGS



ZOOL

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From the darkest corner of the Nth dimension, comes the hippest cosmos dweller ever to take centre screen. ZOOL-Ninja alien and righteous dude is on his way. Hedgehogs beware!

“Gremlin have produced a masterpiece.”
Amiga action 96%

“Fast, action-packed, challenging and highly addictive”
The Sun

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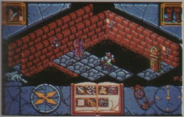
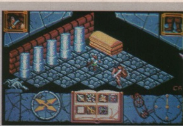
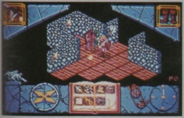
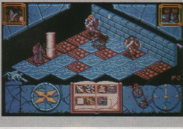
HEROQUEST 2

THE LEGEND *of* SORASIL









Gremlin's first stab at the *Hero Quest* license sold in vast quantities. Steve Lyons travelled to their Sheffield HQ to get a sneak preview of how the much-awaited sequel is coming along.

CARDBOARD CUT-OUTS

Hero Quest represented Gremlin's first step into boardgame licensing. Although the game sold by the lorry load, it suffered from a number of rough edges and it is these that Gremlin have set out to refine. Not wanting to waste a good licence, designer Paul Green, ex-Games Workshop, has returned to the drawing board and come up with *The Legend Of Sorasil* – an arcade adventure that looks set to knock the likes of *Shadowlands* into a cocked hat.

ASK A SILLY QUESTION...

To get an idea of what people might want to see implemented in the new game, Gremlin sent out a bundle of questionnaires to registered users. The response was strong, and consequently *Hero Quest 2* has become Gremlin's most expansive project yet, with just the production notes being spread over hundreds of pages.

I really enjoyed *Hero Quest*, so naturally I was interested to find out what improvements would be made to the sequel. 'The general consensus was that the combat system was rubbish,' says coder Kevin Dudley, previously responsible for *The Shoe People* and the intro sequence on *Space Crusade*. 'To most people, it just looked like a couple of wobbling characters, so we've done a lot of work on the battle graphics. Essentially, there's a lot more animation in the game, with background animations and smoother sprites, just to make it look nicer. Matt Furniss has worked really hard to give the game a completely new look.'

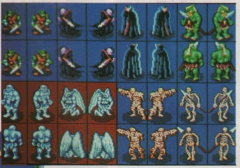
Something else that should please a lot of people is the fact that the landscape now scrolls instead of flips, eliminating the previous problem of being unable to move onto the next screen due to a character standing right on the edge of where you want to go.

FLOWING

'This time the game will have a lot more to it. In the first one, you had a lot of little tasks, all sort of connected, but there was no real storyline. In the sequel you'll get a huge adventure to work through, split over three sections with ten stagess in all. A plague has been placed over the land, so you first have to rid the area of the plague, find out who did it and why, and then destroy the culprit. It's a massive game, so I don't think we'll have as many people phoning us right after release and telling us it's too easy.'

How else are Paul, Kevin, Matt and Patrick Dhelan going to make sure that people who already have *Hero Quest* will want to buy *Legend Of Sorasil*? 'We've added four more character classes to the original four, and they all have specific abilities and strengths. Also, we've dropped the idea of the spinning coin. This time, you'll have 20 points each turn, and it's up to you how you ration them. Moving one square typically uses 1 point, but searching a room could use 10, so there's definitely more strategy in the new game.'

The game is currently going through its final stages of production and, with a strong prevailing wind, should be released this side of Christmas.



Above: Just some of the new creatures you can fight in *Hero Quest 2*. One thing Gremlin are pleased about is the amount of animation this new project contains. As well as full battle scenes, the backdrop is also animated, with changing tiles (*left*) and moving walls.

FROM THE MAKER OF
JIMMY WHITE'S
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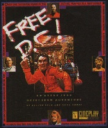
"Hey freedom fighter, how's about a date with DC's No1 party animal?"



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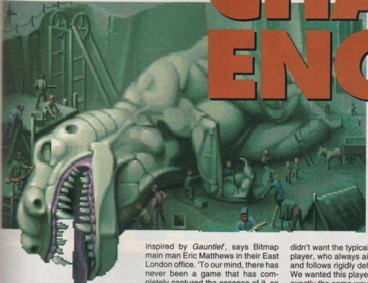
A SERIOUS EXPERIENCE

The Bitmaps have been rather quiet of late. But now they're back. At the recent ECTS show, their new game was causing quite a stir. Tony Dillon takes a look at their latest and greatest.

THE CHAOS ENGINE

WORK IN PROGRESS



A Bitmap game wouldn't be the same without some glorious graphics. Here are the Chaos hordes building a robotic dinosaur.

ABSOLUTE CHAOS

The Chaos Engine is a machine that was placed on Earth in Victorian times to bring terror and disarray. It also happens to be the name of an exciting new product from the Bitmap Brothers, coders behind *Xenon 2, Gods, Magic Pockets and Speedball 2* to name a few. *The Chaos Engine* should be something really special, especially when you consider that it's been in production for two years.

'I guess you could say that *The Chaos Engine* has been heavily inspired by *Gauntlet*', says Bitmap main man Eric Matthews in their East London office. 'To our mind, there has never been a game that has completely captured the essence of it, so that's partly what we're trying to do. You know, the atmosphere generated as you race around a maze, all trying to find the exit while helping each other blast away masses of nasties.'

No one can say that they're doing a bad job of it, if what they have completed so far is anything to go by. It can best be described as an arcade blaster with a few puzzle elements, but there is a hell of a lot more to it than that. You and a friend are combat heroes, dedicated to destroying the Chaos Engine. Before you can do so, you have to wage bloody war over dozens of levels, destroying everything in sight.

But hang on, doesn't this sound just like every other eight-way scrolling blaster? What makes it all so special? 'The one thing that took the most time was working out all the intelligence routines. All of the bad guys have minds of their own and each has a different purpose. Some are placed to guard particular items, whereas others simply home in on you.

TWO PLAYER MODE

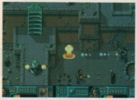
'The biggest task was getting the computer player to react in the right way. The game has been designed for two player blasting, and if you don't have a friend to play with, then the computer steps in. However, we didn't want the typical computer player, who always aims perfectly and follows rigidly defined routes. We wanted this player to act in exactly the same way as a human, so that you feel like you're playing with another person.

'One test we did was to set someone up playing a one-player game in a room by themselves, and then we brought people in to watch. Most couldn't tell which of the characters the person was controlling. I think that says a lot.'

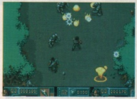
That's not all. Other new elements include a fair scoring system. 'How many times,' asks Eric, 'have you played a game like *Gauntlet* with someone else, only to have to fight

everyone yourself while the other person steps in and steals all the bonuses?' It's true, most people do follow that strategy, but it won't work in *Chaos*. At the end of each level, the computer looks at how much carnage you caused, and how much of the actual level solving you did, and then divides the score accordingly. If you do most of the blasting, then you get most of the cash.

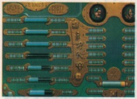
The Chaos Engine is being coded by the familiar team of Steve Cargill, Dan Malone, Simon Knight, Eric Matthews and Richard Joseph. As usual, music is provided by a Rhythm King artiste, in this case dance band Joi. *The Chaos Engine* will be released in November priced 25.99. We'll have a review soon.



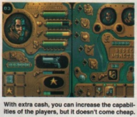
Although the game is top-view, there are up to four elevations to find your way around.



The Chaos Engine is fast and frantic, with enough explosions to satisfy all.



After each level, all treasure and bonus points is divided according to how much work each player does.



With extra cash, you can increase the capabilities of the players, but it doesn't come cheap.

Midway through the bouncy castle stage, Pond attempts a somersault.

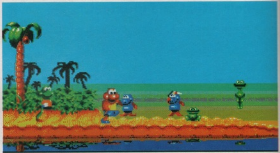
NOT THE PLA(I)CE

Cod almighty, just what is the world coming to? First of all we experience a marked revival in the old *Decathalon*-style game, and then someone goes and throws a fish into the works! Is this the time or, indeed, the pla(i)ce for such escapades? No, not really. Because, brave as this unusual marriage of themes is, *Aquatics* is a tired and very shallow (no pun intended) variant on the sports game theme, and no number of fish-related jokes are going to save it. To be fair, the actual idea is rather a good one. After all, the James Pond character has proved his flexibility in a way neither Mario nor Sonic have achieved, by starring in an arcade/adventure and a console-style platformer, so why shouldn't he be adapted to appear in a sports game? There's no real reason why not, but *Aquatics* is hardly going to enhance the fishy agent's popularity or bridge the gap until Millennium's forthcoming *James Pond III: Splash Gordon*.

As the game unveils its many options, the ever-present marine humour instantly comes to the fore. Taking a break from his exploits as a FI5H agent, Pond and his mates have started up a smaller version of the Olympics which consists of eight main events and two smaller sub-games. Thus, armed with a sturdy joystick and wrist muscles which would make Popeye weep, you step up to the starting line for the first of the events. There are several play modes available to the player, which include the ability to practice the events in any one of three difficulty modes, or play against up to three opponents. Once you have made your decision, you are assigned a trainer (amongst whom are Steve Clam, Billy The Squid, and Mickey O'Shell) and the first of the events is loaded.

PRAWN FREE

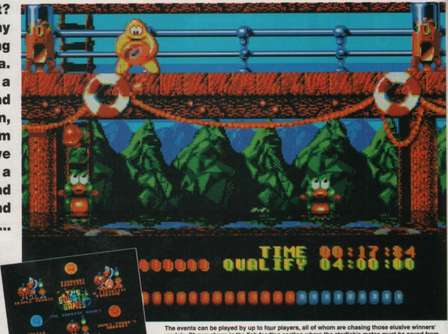
To ease you into the proceedings, the first event is your run-of-the-mill 'waggle-the-stick-to-run-fast' affair. As soon as the starting signal is given, you must assume the normal waggling position and give it all you've got so that your onscreen Sebastian Roe (I'm getting into this fish speak!) pegs it to the finishing line in winning time. Just to add a little extra to the familiar mix, water must also be sped across (Messiah-style) until you pass the post. Depending on your time, the medals will then be handed out and it's on to a bout of Kipper Watching. Contrary to the event's name, this does not in fact



The 100m splash... sorry, dash, is simply a matter of thrashing the joystick until Pond reaches the finishing post.

AQUATICS

Who cod believe it? Millennium's fishy agent is entering the sports arena. Will there be a motorpike and sidecarp section, and will Millennium be squids in? Steve Merrett breams a happy smile and joins James Pond on the beach...



The events can be played by up to four players, all of whom are chasing those elusive winners' medals. Shown above is the fish feeding section where the starfish's mates must be saved from the evil anglers.

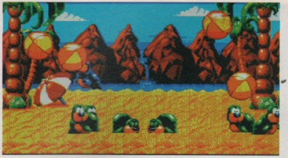
involve watching a smelly yellow fish, but sees one Ceceelia Seal protecting her friends from a rather nasty torrent of beach balls. As the inflatable spheres come raining down, Ceceelia must leg it left and right, deflecting the balls with her nose. If, however, two of her friends are awoken by missed balls, then it's game over.

This is where one of *Aquatics* more annoying points crops up. With the events split between waggling and skill-based ideas, the difference in time between levels is massive. Thus, whilst the running and jumping sections are over in a matter of seconds, up to four tedious minutes of Seal-saving action await you – and as much fun as the Seal section initially is, after a while the novelty soon wears off. Another major problem is that the much-needed variety that sports games need is also missing. For instance, later on in the game, there is a section where a starfish must stop his friends from succumbing to the fishermen offering them sweets. Despite the change of graphics and slightly different slant to the gameplay, this is virtually identical to the Seal section and is inexcusable in a game that is already limited to eight sections.

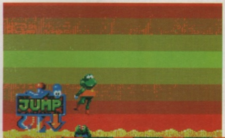
MUSSELING IN

Other ideas in the game include a triple jump variant, a cycling scene and a particularly tedious bouncy castle stage where James must perform a set number of special moves within a predetermined time-limit. Tedious is not the word for this stage, and bouncing between two trampettes whilst effecting a selection of moves proves about as much fun as eating ear wax. It's a real pity that what appears to be a lack of ideas has let *Aquatics* down as some of the events can indeed prove rather fun. However, it is worth noting that it is the more skill-orientated stages, such as the triple jump and 'Leap Frog' hurdling events that prove enjoyable. Even these soon prove tiresome, though. Admittedly, there are two bonus games thrown in for good measure, but even these don't add meat to an already stricken skeleton.

I really wanted to like *Aquatics* as *Robocod* ranks as one of the best platformers I have played. Sadly, though, this undersea exercise program just doesn't cut the mustard and sadly wastes the character's potential. Let's hope Pond's next outing offers more sustained gameplay, rather than a sad collection of poorly thought out sporting events. If he had an expanding midriff in *Robocod*, why not make it flexible and add some sort of Pole Vault-style event? I'm going to clam up now, but *Aquatics* can sadly be summed up in a similar vein to its seaside setting. Wet.



Keeping the seals safe involves protecting them from deadly beach balls.



The animation in *Aquabatics* is superb and obviously a lot of care and attention to detail has been invested in the various characters that populate the game.

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Throughout the game, the controls respond excellently – it's just a pity there's so little depth (no pun intended).

SCORE 0000000 QUALIFY 00:22:00
TIME 00:03:00

The triple jump is a simple but skillful affair which requires both perfect timing and skill.

SCORE 0000000 QUALIFY 00:30:00
TIME 00:04:00

Unicycling uses a control system similar to the cycling event in US Gold's *Summer Games II.*

BAK TO THE FUTURE

Placed alongside such coding veterans as Andrew Braybrook and Tony Crowther, Steve Bak is still relatively unknown. However, when you consider that Steve has broken down more than a few barriers in his time, this is almost unforgivable. For instance, starting with the humble Dragon 32, Steve virtually kept the ill-fated machine alive with his series of *Cuthbert* games. These were basically conversions of such coin-ops as *Defender* and *Space Panic*, but with the titular Cuthbert assuming the starring role. However, for a small army of Dragon owners, they were a lifeline. Logically enough with the advent of the 16-bit ST, Steve then proved critics wrong by getting the machine to scroll vertically. After much hoo-hah from numerous developers saying it was impossible, Steve produced *Goldrunner*, a limited but very fast vertically-scrolling blast which then left the cynics to moan that nobody could do the same with a horizontally-scrolling game on the ST. Oops. Along came Steve again, this time with *Return To Genesis* for Firebird, to prove them wrong. After a few lesser known titles (*Leathernecks* and *Dogs Of War*), Steve then embarked on the *James Pond* game for Millennium, teaming up with his (now) long-term partner of Chris Sorrell. However, *Aquatics* is a purely Steve Bak game, as Chris is currently busy on the fourth *Pond* game, which sees our hero launched into space.

buyers guide

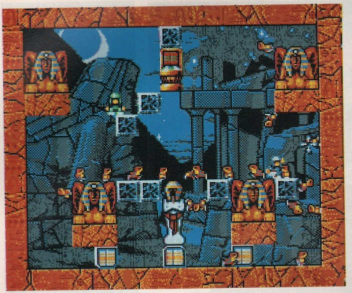
release date	**Out now**
genre:	**sports**
team:	**Steve Bak**
controls:	**joystick**
numbers of disks:	**1**
number of players:	**1-4**
hard disk installable:	**No**
memory:	**Any Amiga**

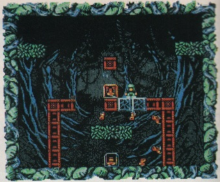
MILLENNIUM £25.99

> **An excellent idea, but the actual game is a bore.**

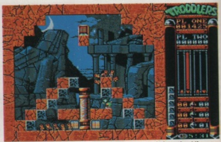
GRAPHICS	83%
SOUND	82%
LASTABILITY	65%
PLAYABILITY	71%

OVERALL 67%





It doesn't take a genius to figure out how to solve this level. Later on, however, things will get much, much harder. You have been warned.



If getting the Troddlers to the exit isn't difficult enough, how about the added challenge of keeping them off ice blocks and out of mincers?

They may look like Lemmings, but the game certainly isn't. Jessica Gedge is puzzled.

TRODDLERS

MESSING ABOUT

Hokus and Pokus are a couple of mischievous fellows. Working for a very lazy, but highly intolerant wizard, they do nothing but skive and get up to all kinds of mischief. One day, the wizard decides he has had enough and sends them down to the cellar to tidy up – a job that should take them a couple of days. While down there, they come across a box marked 'Dangerous'. It transpires that the box contains Troddlers, small creatures dedicated to helping people do their job.

HAPPY SLAVES

Mind-numblingly stupid, with no sense of self-worth or preservation, they are completely harmless unless they should happen to be teleported. If that happens, there's a strong chance that they could become Zombies – nasty Troddlers hell bent on destroying nice Troddlers and humans alike. I wonder if you can work out what happens now? Yes, they all get out of the box and teleport, and so it's up to you to get as many of them back as possible. Who said computer game storylines had predictable endings?

Hang on, you might be saying at this point. That description of the twee little creatures makes them sound just like Lemmings! You're not wrong. These little beings are small, cute and trundle around, forever just walking forward regardless of anything that might be in their way. Thankfully, though, they can't fall from heights. Troddlers have little suckers on their feet, which means that they have no problem at all walking up walls or along ceilings.

There are three different ways to play *Troddlers*. Firstly, there's the solo mode, where you go one-on-twelve and face the game on your own. Then, there's team mode where you and a friend guide the little fellows home. Finally, and definitely the most fun, is war mode, where you and a pal fight it out as one of you guides the Zombies and one the Troddlers.

Mission accomplished
Congratulations!

Press FIRE for next level

Before the start of each level, you are given its password.

MAGICAL LEGO

Unlike *Lemmings*, and the number of clones that are poised to appear over the coming months, the Troddlers themselves have no powers whatsoever. Indeed, the only trick you can perform over the entire 175 levels as you guide your mites from entrance to exit, is that of creating small blocks of granite. Provided you have the magic for it, you can create blocks at will, and place them in any clear space immediately around you. By carefully placing the blocks in the right places, the Troddlers will walk around any hazards and (hopefully) off to the next screen.

Having just one weapon in your arsenal doesn't sound much cop, especially when you consider what's being thrown against you. Mincers tear Troddlers limb from limb complete with a little scream and a splash of blood, cannons blow them away and, of course, Zombies do their best to decapitate the little mites whenever possible. On top of that, you're against the clock all the way, and if you should fail to meet the pass requirements for the next level, you have to try all over again.

Troddlers is a lot of fun to play. It's a very unusual game, and it'll take a while to suss out some of the strategies needed. To my mind, the ultimate test of a game is to start playing it late at night and not be able to let go. I've been up for 24 hours playing this one, so I guess it's passed the test.

buyers guide

release date	October 92
genre:	Platform Puzzle
team:	in-house
controls:	joystick
numbers of disks:	1
number of players:	1/2
hard disk installable:	No
memory:	All machines

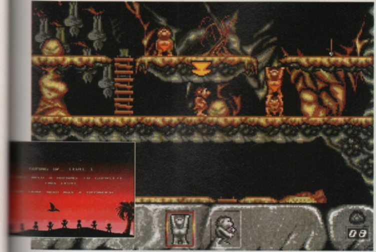
STORM £25.99

“A very addictive and enjoyable puzzler...”

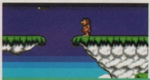
GRAPHICS	81%
SOUND	75%
LASTABILITY	82%
PLAYABILITY	84%

OVERALL 83%

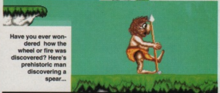
HUMANS



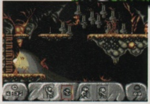
By stacking humans on top of each other, you can reach higher platforms with ease. To begin with, this is one of the only things you are capable of doing. Have Mirage found the missing link? Was it a step ladder?



By throwing the spear across the gap, our missing link has placed it in a more convenient location for his chums.



Have you ever wondered how the wheel or fire was discovered? Here's prehistoric man discovering a spear...



The spear can also be used to leapfrog over large gaps. Early humans were notoriously stupid, and didn't discover how to jump until they were all champion pole-vaulters.

Mirage's latest puzzler is set in the stone age. Tony Dillon discovers that he looks rather good in a loin cloth. (The very thought...)

SOUNDS FAMILIAR

Humans is a game in which you control a lot of small, unintelligent, but undeniably cute, characters around platform-dominated levels with the aim of getting them to the exit before the clock runs out. Yes, it's another game that (very) loosely falls into the 'it's-a-bit-like-*Lemmings*-really-isn't-it?' category.

THE DAWN OF TIME

These are no ordinary humans, however. This is prehistoric man, the first animal ever to discover personal modesty before fire. You are in charge of a tribe of these barbaric warriors as they wander aimlessly through eighty of the most taxing levels I've ever encountered in a puzzle game. To begin with, you only have eight men to control, but as the game progresses, you can gather more by rescuing them from traps and other predicaments. But what exactly do you have to do?

The game is split over six different types of terrain: Caves, Summer, Winter, Desert, Forest and Marsh. The aim of each level is one of three things. You'll either have to get one human to the exit, discover a particular object such as a spear or fire, or rescue a prisoner. Each of the levels is a huge scrolling affair riddled with platforms, and you begin each one with only enough men to solve the puzzle involved.

CAN'T DO MUCH

Each human begins with only two abilities. Picking up objects is an obvious one, but the other allows you to stack men on top of each other. This is the only way to reach higher platforms, and the more men you use, the more unstable the tower of bodies becomes. As you discover the various objects within the game, the humans become more proficient. For example, picking up a spear adds three new skills to a player. He can throw it to other humans, he can use it as a weapon or he can pole vault with it, allowing him to cross gaps between platforms.

SIMPLE CONTROLS

The control system is simple enough. The joystick controls all the walking about, and pushing up automatically puts the current man into a stacking position. On the keyboard, the function keys transfers control over the humans on screen, and the space bar and return keys are used, respectively, to cycle through the menu options at the bottom of the screen and to select an option. Only the available options are shown, thankfully, so you don't have to trudge through a lot of useless icons. There are only three things that can kill you: dinosaurs will most certainly eat you sooner than blink, and falling too far smashes you to a pulp. Finally, the evolutionary clock hurrying you along each level, is enough to wipe out your entire tribe in one fell swoop.

Humans is a hell of a lot of fun to play, even if most of the levels require repeated endeavour to crack them. With each level made up of a number of screens, it is never immediately apparent what you are supposed to do or where you are supposed to go. Because of its similarities with *Lemmings*, the game will probably be slagged off by a number of magazines, but that's being incredibly short-sighted as the gameplay is decidedly different and very challenging. The incidental humour and brilliant animation only add to what is already an above average game, and I heartily recommend *Humans* to anyone who enjoys a challenge.

Bonus Animations

If you're lucky enough to have a Meg, and let's face it who isn't, then you'll be interested in the animations that pop up between some levels – usually after you've discovered a particular item. First, you'll be greeted with a newspaper headline celebrating your deed, followed by Mirage's interpretation of how it all happened. I won't spoil it for you, but the caveman who discovered fire and then wondered what it tasted like had me laughing for ages...

buyers guide

release date	**September 92**
genre:	**Platform Puzzler**
team:	**Imagitec**
controls:	**Joystick, Keyboard**
numbers of disks:	**3**
number of players:	**1**
hard disk installable:	**Yes**
memory:	**All Amigas**

MIRAGE £25.99

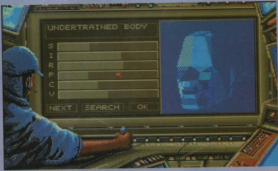
“A heady mix of platform antics and strategic thinking”

GRAPHICS	86%
SOUND	84%
LASTABILITY	89%
PLAYABILITY	88%

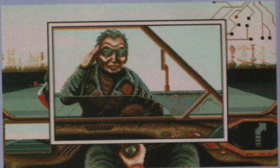
OVERALL 84%

Interstellar intrigue and cosmic conundrums are only part of the problem in the super-charged follow up to the original Bat. Mark Patterson gets clued up.

BAT 2



Choose the skills you think will be necessary to complete the mission. These might include weapon handling and perception – choose carefully, as you could come unstuck later on.



The traffic police will pull you over if you're seen speeding along the motorway, so it's best to exercise a bit of caution rather than putting your foot to the metal.

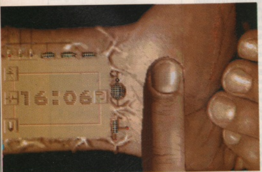
BATTER UP

The Bureau of Astral Troubleshooters (BAT) is a kind of interstellar CIA, whose role is to safeguard the security of the Confederation of Galaxies by whatever means possible. Naturally this involves a few deaths, the occasional bit of espionage and a company credit card for their agents. As one of their men you've been assigned to track down a group of terrorists and free up the galactic economy which is suffering at the hands of the Koshan Corporation.

Before you begin the game proper you have to define your character. A number of statistics such as strength, reflexes and perception go into his or her make-up. Each attribute can be increased beyond its preset limit, but doing so will reduce another category. When the physical aspects have been sorted, your agent has to be trained. You have eight weeks before embarking on your quest and seven skills to learn, such as weapons and survival. Although you can spend more time learning specific skills and neglecting others, it pays to have the best mix possible as you never know what's around the next corner..

The game starts in Roma 2, the capital city of the planet Shedishan. You've been sent in to support special agent Sylvia Hadford on a mission to break The Koshan Corporation's monopoly of the mineral Echiatone 21. You start off at the space port with no equipment, no money and no idea where your rendezvous point, the hotel, is.

When you do track Sylvia down she gives you a credit card and a few useful documents. She then goes into more detail about your mission, which is to acquire shares in the Echiatone production plants through underhand dealings with corporations and civic figures.



BOB can be used to enhance your character's skills or, if you're a technophobe, it can also double up as a flash digital watch.

CROSSTOWN TRAFFIC

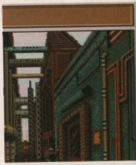
You're not alone, though, as throughout the game characters can be recruited to help you in your mission. Once someone has decided to help you it pays to give them a video phone – that way you can keep tabs on them and they can contact you as soon as they come across any information.

Travelling around Roma is an expensive business. The cheapest way is to take the Via, a futuristic land car. You can pay 300 credits (plus a fine if you crash) to drive it yourself or 400 credits to have a computer pilot. This is all very well, but you can only access the towers which house corporations from the air. For this you need to use the trusted sky taxi service. Like taxis all over the galaxy, they cost a fortune, but are an essential part of the game.

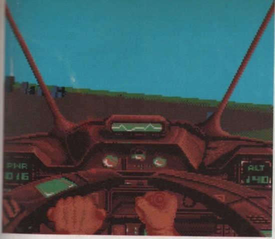
POINT 'N' CLICK

The game is entirely mouse controlled. The pointer changes when it moves over an object or area your character can interact with. For instance, when you move it onto a door it changes to an arrow, or to a talking head when moved onto another character.

It's almost impossible to miss a key object or location with the system, as you can find out everything contained there by simply moving the



The cityscape is reminiscent of both Blade Runner and the mega cities of Judge Dredd.



pointer around. Objects are used automatically when needed, but if you don't have the required item the cursor turns into a question mark.

The programmers have described the architecture of Roma 2 as 'High-tech paradox', whatever that means. What it looks like is the Blade Runner sets on a midsummer's day – potentially sinister if it wasn't so bright. The graphics are displayed with a system called Dynorama, which shows the locations in comic book-style panels. When you move onto a new screen your previous two locations are also displayed, which is a little confusing at times. I would have preferred one large display instead of three small ones.

CHAT BACK

Conversing with other characters is the key to advancing in BAT. When you click the pointer on a person the communication window appears, displaying a list of topics you can ask about. When they reply, key words will be shown in red and clicking on these provides further info. Most characters say the same thing though, and this is where I encountered my first problem with the game. I had been told to seek out the AIC building, but when I made an enquiry about it I was told I needed the AIC card. When I asked about the AIC card I was told to find the AIC building. Eventually I gave up and found it by luck. Unfortunately, luck doesn't make for good game, and there are several instances in the first part of *BAT 2* where I had to stumble blind through Roma 2 hoping that I was going the right way.

You can only ask people about things you know already. So if you discover a new corporation their name will be added to your list of potential questions.

Of course, probing around these giant corporations does attract interest and sooner or later you're going to end up in a fight. There are weapon restrictions in Roma, but providing you don't go flashing guns about, you can normally carry your blaster without drawing any attention. Combat can be played in one of two modes: action, where you pot-shot your foes, or strategy. The latter of the two is best employed when there are several people in your party, as you can see what chance the individual members have of scoring hits plus how many hits they've taken.

The first section ends with you being wrongly arrested for murder. In order to get back into the galaxy saving business you have to enter a Roman-style arena, where you fight other future gladiators to try and win your freedom. Survive that and you journey into space where you have to solve the final part of the mystery and bring stability back to the galactic economy.

DONGLEY DELL

BAT 2 is a gigantic game, which is reflected in its five (count 'em) disks. The manual has to be read before you load the firts disk, and even then you'll still need to play one throw away game just to get used to combat and the controls.

Ubisoft have opted for dongle protection similar to that used in *Dynablaster* and Ocean's *Robocop 3*. The dongle plugs into the back of your Amiga and only then will the game load. Apparently, they only cost 60pence to manufacture, so why the game costs a whopping £34.99 is beyond me!

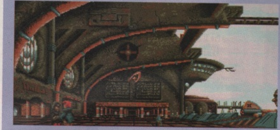
If you're a fan of the original *BAT* you'll probably love this, otherwise be prepared to put aside plenty of time to get into what is hugely involving game. The rewards are almost certainly there, it's just finding them that proves difficult.

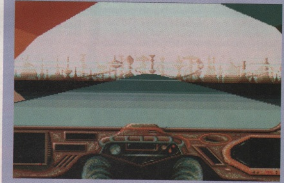
VIDEO NASTIES

BAT features several sub-games which aren't integral to the plot, but are fun to play anyway. There's an arcade which has versions of *Chinese Checkers* and *Breakout*, as well as an original game called *Tubular*.

There are also a number of simulation sections where you pilot spacecraft, cars and airplanes. These are good fun and are a nice diversion from the sometimes heavy-going main game, and can't be avoided, so you'd better be a dab-hand a steering with the mouse, or saving the game out on a regular basis.

BAT has a number of 3D stages where you get to fly or drive a futuristic vehicle of some description. At some stage you'll have to get behind the wheel, as parts of the game are inaccessible on foot.





The city is covered in an extensive network of motorways and this is the cheapest form of transport. However, it limits you to how much of the city you can explore.

UBI SOFT £34.99

"Intriguing RPG with plenty of action..."

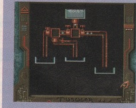
GRAPHICS	87%
SOUND	83%
LASTABILITY	84%
PLAYABILITY	82%

OVERALL 84%

B.O.B. ROBERTS

The one piece of equipment that you start the game with is your Bidirectional Organic Bioputer, or BOB for short. This device is an ultra-sophisticated computer which is built into the arm of your agent, and monitors your physical condition as well as patching you up after combat. One of its most useful features is its ability to accept implants which increase your agents abilities, allowing him to go without sleep, heal faster, let him see at night or even change the way he looks.

BOB can also be programmed to react to certain conditions. For instance if you're not doing so well in a fight it will automatically activate the healing implant, it can even be used as an alarm clock.



GAME
BET
QUIT

buyers guide

release date	**November 1992**
genre:	**RPG**
team:	**in-house**
controls:	**mouse**
numbers of disks:	**5**
number of players:	**1**
hard disk installable:	**no**
memory:	**Any Machine**

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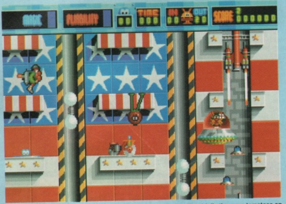
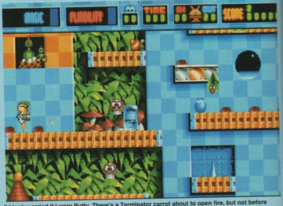
John McGrane has always been a funny-shaped bloke, but he really cannot compare to the stretchable star of System 3's latest blockbuster game.

PUTTY



Putty halfway up the tower, and things are getting really tough. Thankfully there are tomatoes on legs just waiting to be absorbed for energy.



I'd look worried if I were Putty. There's a Terminator carrot about to open fire, but not before shouting 'Uzi 9 Centimetre' at the top of his little voice.

Mention the name System 3 and the average gamesplayer will automatically think of their Ninja series of strategic arcade adventures. Lately, the Harrow-based company has been trying to distance itself from the Ninja reputation with an avalanche of different gaming styles. First their was the platform antics of *Fuzzball*, then the hack'n'slash going-on in *Myth*, and now *Putty*.

GOING ARCADEY

The story goes something like this. You are Putty, a small globular chap composed almost completely of putty. You know, the funny little brown substance that you used to put around the glass in your window panes to keep the difference between a hole in the wall and a window constant. Rather like Zaphod Beeblebrox's revelation that biro pens live a life of their own on a biroid planet somewhere in the Horsehead Nebula, System 3 believe that all putty comes from a place known as Putty Moon, circling somewhere in their unstable imaginations.

Anyway, Putty Moon has been taken over by an evil wizard called Dazzledaze, and as one of the small blobs who weren't entirely happy with this situation, you were banished from the planet. Naturally, you don't want to stay in this predicament, but how can you return without a rocket? Just ask a passing bunch of friendly robots to build a skyscraper high enough to allow you to reach Putty Moon. Of course, Dazzledaze doesn't want you to come back, so has sent everything he's got to slow you down or stop you completely. That's only to be expected, but the other problem is one of your own making. The robots are all solar powered, but you can only operate at night. By day, the robots are a friendly enough bunch, laughing, joking, building and slapping each other's backs occasionally, but at night they become mindless and suicidal, and so have to be watched all the time. What's a poor Putty to do?

One of the game's more menacing meanies – an Acid pig on a space hopper.

CAN DO A LOT

You'll just have to get by with Putty's rather extraordinary capabilities. I have to say, if there's one thing the console invasion has done for Amiga games, it's the introduction of very versatile characters. Putty, like the toy of similar name, can do a hell of a lot of things considering he's just a small blob of goey stuff. He has many different ways of moving about, for example. He can walk along platforms, with two little bumps sticking out below him in place of feet. He can leap too, gathering himself into a little ball and then springing up into the air. But that isn't all.

Possibly Putty's biggest trick is his ability to stretch himself over vast distances until he finds another platform, at which point he pulls the rest of his being after him, basically transporting himself to his new location. This trick, once mastered, allows him to race all over the screen in virtually no time at all.

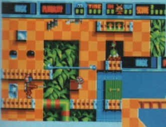
But, you might be asking, what can he do to defend himself? In this respect he can use one of four different tactics. He can either punch to the left or right, forming a small part of his side into a fist and then jabbing anything within range. Or, with most enemies, he can absorb them, extracting the life energy for himself. This is done by getting in front of them and then spreading out flat on the floor until they walk on him, at which point he sucks them in. Another trick (and this he can only do with limited enemy creatures) is 'Puttymorphing'. When he has absorbed a creature, a double stab on the fire button changes him into the shape of the aforementioned victim, complete with attacking capabilities. For example, in Toyworld a clockwork orange marches up and down spitting pips. Once Putty absorbs this and polymorphs into it, he can spit pips at other enemies. Smart eh?

Finally, for a really big bang, Putty can turn himself into a smart bomb to take out all the opposition on screen at once. Waggling the joystick furiously causes Putty to expand to superPutty proportions before blowing up, wiping out everthing else.

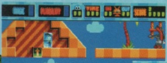
PLIABILITY

None of this can be done without energy, and Putty needs a lot of this in the form of Pliability to be able to do anything besides leap. As he performs all his little functions, his Pliability meter slowly drops, but this can thankfully be replenished by absorbing passing creatures as well as bonus food and energy tokens.

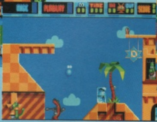
The game is played over six levels, starting on the ground and



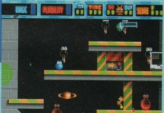
A shot that shows Putty's incredible stretching ability. Who do you know who could cross a gap like that?



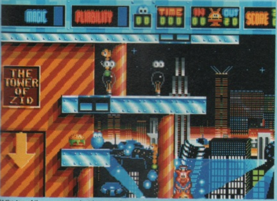
On the early levels, the robots are held in stasis, so you don't need to worry about them doing Lemming-like leaps over large holes. That sll comes later...



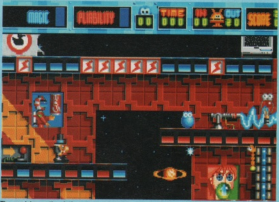
Putty prepares to land on a Liverpudlian sausage. Failure to land correctly means you have to listen to him taunting you endlessly.



Two things to watch out for here. The lightbulbs are charged and will electrocute Putty should he stray too near. Also, touching the joystick releases the space invaders. You were warned.



At the top of the screen, an electric worm charges the lightbulbs. If you puttymorph into a worm, you can overcharge the bulbs and destroy them in one swoop.

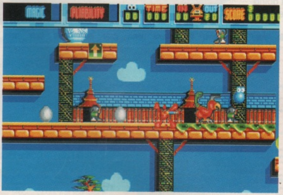


The magician on the platform turns robots into rabbits. Certain creatures eat rabbits. You have to try and kill the rabbit-eating kind. Finding out how is the charm of this level.

working upwards to the tallest building on Putty Moon, where Putty can make the most important leap of his life. Each of the six levels is played over four stages, and each stage can be up to four screens high. The format of each screen is essentially the same, although the strategy develops as the game goes on. Robots appear all over the level, and you have to collect them, one at a time, and drop them off at a specific point until a preset total has been matched. At the start of the game, everything is pretty easy. The first level actually contains a trainer mode, complete with arrows and instructions written on the wall to help you become accustomed to Putty's powers, and to teach you some basic strategies for getting around the vertically scrolling screens.

As you go through the early stages, it's a simple case of bouncing around the levels, avoiding the enemy and getting the robots home. However, as you continue through the game, your strategies need to be developed as the gameplay takes on some unexpected twists, such as enemies that home in on you for example, or platforms that only move when you're not on them. Just because you can walk through the early levels without blinking doesn't automatically mean that you'll get through the later stages just as easily.

The range of enemies is quite astounding, and some are quite disgusting. From the terminator carrots, who scream 'Uzi nine centimetre' before trying to blast you out of the skies, to the toy soldiers who march up and down belting out 'Achtung!' before clobbering you, there are some really bizarre sprites to encounter. There is even a guy in a bath who fires deadly bubbles of noxious gas in your direction, but not before letting you know exactly where the gas comes from by making a revolting gurgling sound in the bathwater. Almost every single character has some aspect to them that'll make you laugh. God knows how they got half the samples in the game and, come to think of it, I really don't want to know either. These guys are sick!



The arrow on the block means that you can use it to jump higher. There are dozens of things like this scattered about each level, all designed to help you in your quest.

UNCLE TED

There are a range of bonuses to collect, too, most of which are hidden in various parts of the scenery. It's down to you to discover how to find them. Naturally, there are all the standard options, such as bonus points, bonus energy, extra life and invincibility. Where would a game be without them, but there is one special bonus that reduced me to hysterics. Picking up this capsule releases the most foul demon ever seen in a computer game, a horror so unspeakable that the slightest sound of the poisonously magical tune he plays is enough to turn any creature into a whirling, dancing dervish, incapable to react in any way other than to jig like the children of Hamlet. This monstrosity is a pub-pianist by the name of Uncle Ted – Children's performer and club cabaret star extraordinaire. Ted sits there, behind his upright piano, and bashes out a 'Roll Out The Barrel' style anthem which renders everything helpless. What a guy!

After *Myth*, System 3 had to come up with something completely amazing graphically and sonically as to not move backwards. They couldn't have

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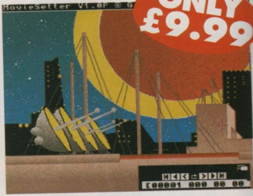

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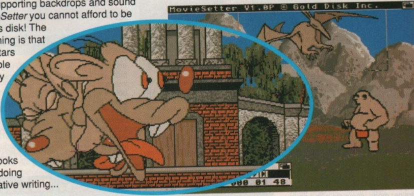

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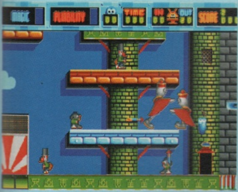
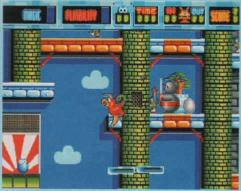
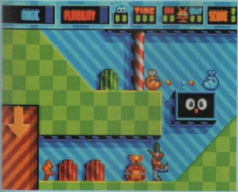


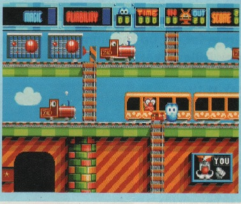
The little guys with the cannons can be absorbed and used in a Puttymorph. This little tricks lets you become one of them and use your own rocket launcher against the Chinese Ghosts.



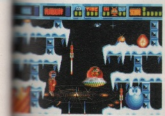
What's this? A fat samurai who can't walk further than a couple of steps without running out of breath and a chicken that lays exploding eggs. Only Putty goes to this level of wierdness!



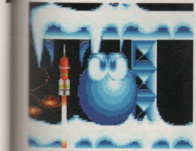
Putty takes on a clockwork orange at its own game. This shot was done immediately after a Puttymorph, and shows just how useful it is. Watch out for the German toy soldier, though.



Further on in toyland, and you've entered the land of the trainspotters. See the little guy in the train? He may look harmless, but watch out for the wind up engines he throws at you. Lethal stuff!



Putty shortly before exploding. Note the look of intense concentration. Spontaneous combustion is a tough trick to do, you know...



Look, there's no kidding us. We recognise this little guy. Remember the Clangers? Remember the little guys in the soup caves? Here he is!

released a better product than *Putty*. All the way through, samples fly out of the speakers thicker and faster than anything heard before. A sausage that threatens to 'ave you now' in a scouse accent, a cat that pops up to taunt you Bugs Bunny style and a theme tune vaguely reminiscent of the Joe 90 intro, complete with Hammond Organ. This game has over a Meg of sound samples, and it shows.

Visually, *Putty* is something else. The animation on the main sprite is among the best I have ever seen, and I'm only too glad that there is a demo on this month's coverdisk so you can see how wonderfully he moves. Every little movement causes his eyes to swing about, and the angry look of concentration just before he explodes will stick in my mind as one of the most expressive faces ever seen in an Amiga game.

Putty is unlike anything I have played. It's not quite a platform title, and there is too much to it to call it a console action title. One thing I can say about it is that it is brilliant. The in-house programming team have let their imaginations run riot and the result is one of the most original games for a long, long time. Each level offers a new challenge coupled with another motley collection of hostile enemy sprites to overcome. This game HAS to be in your collection, whether you want it or not. Thanks to Commodore's new deal, this game will appear in the Christmas packaging of the A600. Lucky beggers. Everyone else, buy it now.

MANUAL

Putty is a very versatile creature, and you'll need a lot of practice to master his moves. System 3's Adrian Cale agrees, and feels that it's unfair to throw players in at the deep end. 'If I pick up a game, and find I can't play it right off, I get frustrated. We want people to enjoy *Putty* to the full, which is why we've thrown in the trainer mode on the first stage, and given the game a definite curve'. The manual is also written for the first time Puttyist, using masses of illustrations to show exactly how to control our hero and what sort of strategies to adopt. How's that for customer service?

WHAT DIDN'T GET IN

The lads at System 3 are almost completely happy with this product. Almost, but not quite. The one thing they still find the time to complain about is the amount of things that they wanted to go in but just couldn't find the room for, such as some heavy breathing from an oversized Samurai who tires himself out after the smallest jump. Watch out for data disks soon...

buyers guide

release date	**October 1992**
genre:	**Adventure**
team:	**in-house**
controls:	**mouse, joystick**
numbers of disks:	**4**
number of players:	**1**
hard disk installable:	**no**
memory:	**1Mb**

SYSTEM 3 £25.99

‘ One of the best games ever. An instant classic. ’

GRAPHICS	96%
SOUND	95%
LASTABILITY	88%
PLAYABILITY	95%

OVERALL 95%

ARCHER MACLEAN'S POOL

Can Virgin follow up the immense success of Jimmy White's Whirlwind Snooker? Will Tony Dillon ever write a decent review? Read on for these answers and more...

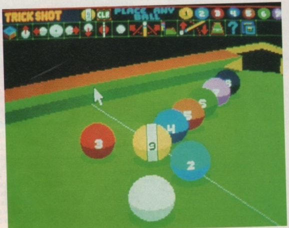
THE WAY IT WAS

Back in 1988, Archer Maclean popped into EMAP Towers with an Archimedes disk. It was an early demo of a polygon snooker game which had everyone gasping in astonishment. Three years later it surfaced in the form of *Jimmy White's Whirlwind Snooker*. Both reviewers and punters loved it, and the game has been in the top thirty on and off ever since. And now Archer has turned his attentions to the other side of the Atlantic to produce *Pool*, a game which is more than just a cash-in on the previous license.

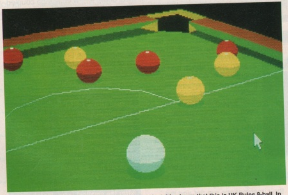
Pool is, in essence, a far simpler game than snooker. There are two main forms, although 8-Ball has both US and UK rules. 8-Ball basically consists of seven red and 7 yellow balls, and the black. The aim is to knock down all your colour before your opponent has a go at theirs, and then knock down the black to win. In 9-Ball, a US tournament game, you are presented with nine numbered balls, and the winner is the person who knocks down the 9 ball. The only problem is, you have to hit the lowest ball on the table first. Any balls that go down after that are legal. For example, if on a break you hit the 1 ball which then cannons into the 9 ball, knocking it down, you are the winner. However, if you should hit the 2 ball when the 1 ball is on the table, a foul is called and control switches to the other player.

ANY DIFFERENCE?

Naturally, what everyone wants to know is what is the difference between this game and *Whirlwind*? To tell you the truth, not a hell of a lot. Instead of reworking the game, Archer has merely added a handful of improvements to the framework, and kept the graphic engine and user interface the same. Now, on top of being able to play one or two player games, you can play 'best of' matches against the computer or a friend, playing 3, 5, 7 or 9 games, with the aim of winning more than your opposing cuester.



A trick shot that perfectly demonstrates the new computer intelligence. Unlike *Jimmy White's Snooker*, computer players can work out cannon shots and will try to pot two balls at once.



Lined up nicely on the corner pocket, the arch on the table shows that this is UK Rules 8-ball. In fact, one of the few differences between this and USA rules is the single semicircle on the table.

The computer intelligence has undergone a major overhaul. There are now twenty computer opponents to play against, each with their own playing styles, from Cross-Eyed Colin at one end (not particularly good at aiming) to Jimmy Brill, the finest potter in the pool world. There are no specific difficulty levels, unlike the original, but it isn't too hard to figure out how good a player is from their name. Actual skills have been improved and increased, however, with computer opponents being able to pull off cannon shots and pot two

BEADLE'S ABOUT

Here's an interesting titbit of information for you. Did you know that the brainbox who connected Archer Maclean's snooker project with Jimmy White was in fact...Jeremy Beadle? Apparently Archer was demonstrating his game at the Spring 1991 ECTS show when everyone's favourite entertainer walked in on the scene, spotted the program and said 'Why don't you call Barry Hearn and license Jimmy White for that?'. Archer liked the idea, got on the blower and the deal was done. And you thought Beadle was just a... (the rest of this sentence has been censored following legal advice from our solicitors.)

balls at once. There is a whole range of trick shots at their disposal which'll leave you standing at the foot of the table watching enviously.

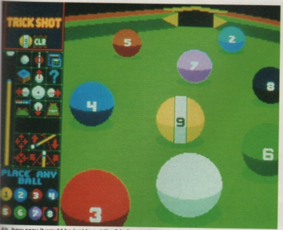
The other main improvement is the new scoring system. Obviously in pool you don't rack up numerical scores like you do in snooker, so Archer has come up with a novel system of recording how well you're playing. The Rankometer gives you the order of potted balls, your overall skill rating as a percentage and various other statistics. This is what gets saved out at the end of each go.

NUMBER CRUNCHER

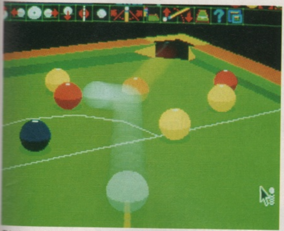
The most striking thing about *Whirlwind Snooker* was the graphics. Convincing, smooth and very fast, it isn't hard to understand why it sold so well. Can Archer do the same with *Pool*, though, as pool balls are numbered, and the 9 ball has a stripe down the middle? Calculating the position of the numbers as they rotate around the ball would call for some serious number crunching, and so Archer has decided not to have rolling numbers. Sadly, this detracts from the game, making the balls look as though they are gliding around like table hockey pucks. Even so, they still zip around smoothly enough and the 88 different sizes of ball graphic means that the balls all glide across the table realistically.

The game itself plays exactly the same as the previous one. A row of icons gives you all the options necessary, while holding down the left mouse button allows you to rotate the table and holding down the left lets you zoom in and out.

To all intents and purposes, *Pool* is almost identical to *Whirlwind Snooker*, which is why I can only recommend this to you if you (a) don't have the previous title or (b) loved the first one so much you want more of the same.



Ah, how easy it would be just to pot the 9 ball now. Unfortunately, the lower numbered balls have to be hit first, so this opportunity is wasted.



This slow motion shot shows how perfectly smooth the ball movement is, and so it should be considering that there are 88 different sizes of ball.

CU AMIGA SCREENSTAR

EXTRA BITS

One thing everyone remembers from the original game were the little extra bits – those Archer Maclean trademarks designed to give you a giggle while you played. Cat Fleas crawled up the screen and balls pulled funny faces – where would the sequel be without a little of that thrown in. Not only are the fleas still included, but new ideas include eyes that blink in the backdrop and a saw that comes up from under the table and makes a little hole!

buyers guide

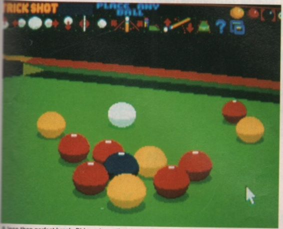
release date	**October 1992**
genre:	**Sim**
team:	**Archer Maclean**
controls:	**mouse**
numbers of disks:	**1**
number of players:	**1**
hard disk installable:	**no**
memory:	**1Mb**

VIRGIN £25.99

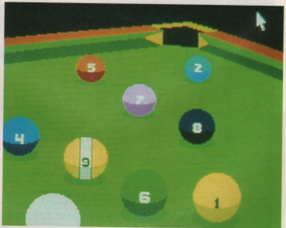
“Will keep you coming back time after time...”

GRAPHICS	88%
SOUND	83%
LASTABILITY	90%
PLAYABILITY	90%

OVERALL 88%



A less than perfect break. Did you know that the positions the balls end up in after a break is calculated before the shot is taken? It all happens when the cue moves in and out...



USA 9 ball pool. In the US, all the balls are numbered, and the aim is to sink the 9 ball. Sadly, the numbers don't move around the balls as that would have made the game too slow.

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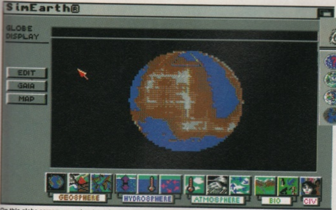
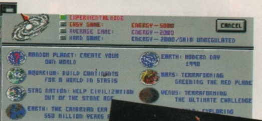


On this globe screen, your planet revolves innocently enough. The buttons at the bottom select the different overlays, such as sea temperature and location of any cities.


EXPERIMENTAL MODE
EASY GAME: ENERGY – 5000
AVERAGE GAME: ENERGY – 2000
HARD GAME: ENERGY – 2000/GAIA UNREGULATED
CANCEL
RANDOM PLANET: CREATE YOUR OWN WORLD
AQUARIUM: BUILD CONTINENTS FOR A WORLD IN STASIS
STAG NATION: HELP CIVILIZATION OUT OF THE STONE AGE
EARTH: THE CAMBRIAN ERA 550 MILLION YEARS A
EARTH: MODERN DAY 1990
MARS: TERRAFORMING GREENING THE RED PLANE
VENUS: TERRAFORMING THE ULTIMATE CHALLENGE
EXPLORING

Above: These are the eight scenarios you can play, from a planet completely underwater to terraforming Venus. The selector at the top lets you choose the amount of energy you have to play with.

SimEarth®
©1992 Maxis and Will Wright

SIM EARTH

In the beginning there was darkness. John Mather turns on the lights...

LIFE AND TIMES

Sim City is generally regarded as one of the best products ever released on a 16-bit machine. On paper the game might sound deathly dull. I mean, the chance to build your own city from scratch, complete with roads, power cables and nuclear reactors doesn't sound very interesting, does it?! Maybe it would appeal to sad anorak cases, but who else? In practice, though, the game was a revelation and became an instant classic.

For the last three years, Maxis have been working on its successor. The finished game – *Sim Earth* – is so huge it encompasses the entire solar system and projects way out into the future. Your decisions can affect anything from a single life cell through to a complete planet. When it was released on the PC and Mac, the game received rave reviews in the computer press and now, finally, we have the finished Amiga version. Hurrah.

TOY CUPBOARD

Maxis prefer to call *Sim Earth* a 'software toy' rather than a game. A game, they state, has a preset beginning, a preset end and a specific train throughout. A toy, however, is something you can use in anyway you find possible. In this respect, *Sim Earth* definitely falls into the second category. The basic aim is to guide a planet through its evolutionary processes and keep things ticking over. The model runs around a theory created by James Lovelock called Gaia (see 'Gaia Theory' box out). Your task is to ensure that the planet stays in a condition suitable for its inhabitants. If your planet is largely water based, and you have a lot of different types of fish bobbing about, it wouldn't make much sense to increase the greenhouse effect and the sun's heat, effectively boiling away the oceans. This is a hell of a lot more complicated than it sounds.

In your disconnected position, you have complete control over almost everything in and on the planet. You can create life, destroy it, cause major tragedies, form new oceans, even change the way sentient and non-sentient beings behave and respond, all through a series of menus and slider bars.

MAJOR TOM

Your overall objective varies depending on which of the eight scenarios you want to play. You can take on Earth in prehistoric times, just before the birth of mankind, and shape the planet through to its ultimate ending as the sun washes over it. Alternatively, you can try solving modern day problems, such as coping with nuclear fall out, reducing the greenhouse effect, removing starvation and generally returning the planet to the Garden of Eden. Should you find that a little heavy, you coud try to colonise Mars or Venus, adding an atmosphere and essentially terraforming the planet to your own requirements. There is also the chance to completely design a planet from scratch, to give yourself various problems of your own making or to explore how different situations would evolve with different actions.

The first thing you'll notice when you open the box are the two *Sim Earth* game disks. One is for the standard user, where the game requires 1Mb to play and runs in low resolution mode. The other is for more advanced machines, running in hi-res interlace and requiring 2Mbs. The latter is obviously faithful to the PC and Macintosh versions, but you only lose out on presentation if you don't have the high grade set-up.

On loading, you are presented with the opening menu. This shows you the eight different scenarios you can play on, as well as the difficulty level. Changing the level of difficulty doesn't actually change how the game runs, but it does affect the amount of energy you have for dealing with problems. There is also an 'experimental' mode, which gives you limitless energy, making life so much easier.

CREATURE COMFORTS

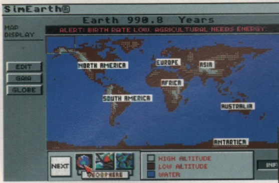
Energy is at the core of the game and is split into two parts. The first, *your* energy, is the total amount of control you have over the running of the planet. Creating life takes only small amounts, and you can plop animals down wherever you like most of the time. Doing something a little larger, however, such as causing an earthquake, eats up your energy in no time.

The other kind of energy belongs to the SimEarthlings, and although you inherit some of this, you can never have control over it. Essentially, as species develop and grow, you get more and more energy – rather like taxation in *Sim City*.

The game is essentially played out over three screens, although there are numerous windows that can be called up at any time. The first is the map screen. This gives a full, flat image of your planet along with a series of buttons at the bottom. By pressing on different buttons, you can find out about the temperature, air currents, amounts and position of life on the planet and various other things. A click on the 'Globe' option turns the map into a rotating ball, showing more precisely

MANUAL LABOUR Flicking through the manual gives you a good idea as to the research that has gone into *Sim Earth*. Spread over 220 pages, the first 10 outline the game, the following 130 detail the events and lifeforms, and the ensuing 80 page section explains in detail Earth science and the Gaia theory. Not that it's necessary to know Earth science inside out to play the game, but it does enhance the experience when you find you can explain why something is happening and then make educated guesses as to how to solve any problems.

SIM EARTH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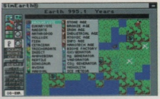
SOUTH AMERICA
AUSTRALIA
ANTARTICA
NEXT
GEOSPHERE
HIGH ALTITUDE
LOW ALTITUDE
WATER

Earth in the present day. All major areas are marked, and this facility lets you chart the progress of land as the tectonic plates move.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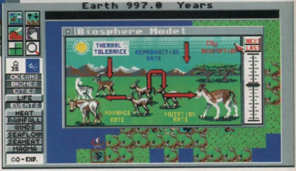
BIOME FACTORY
OXYGENATOR
MONOLITH
ICE METEOR

Above: These are all the lifeforms you can work with, as well as the different machines you can plant to change the world .

CU AMIGA SUPER STAR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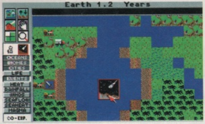
MUTATION RATE
NEXT
LAST
OCEANS
BIOMES
CITIES
LIFE
EVENTS
HEAT
RAINFALL
WINDS
SEAFLOW
SEAHEAT
MAGMA
CO-EXP.

Just one of the four models you can use to adapt the overall way of life. By clicking on the different topics and moving the slider, you can change how life evolves.


Earth 1.2 Years
OCEANS
BIOMES
CITIES
LIFE
EVENTS
HEAT
RAINFALL
WINDS
SEAFLOW
SEAHEAT
MAGMA
CO-EXP.

A meteor falls onto a large area of land, causing it to split. Natural disasters can be called up at any time to help you form new land masses.

where everything is. Interestingly enough, the maps of Earth, Venus and Mars are very accurate. Most of the time this screen is used for reference, a way of seeing at a glance if there are any major problems that need fixing.

The main screen is the editor where all the action happens. The main part of the screen is taken up with a close-up view of part of the landscape. Marked on this map are all the different types of terrain and inhabitants. Obviously this view is simplified, but what more could you expect?

GAIA In *Sim Earth*, Gaia is a living object, a face projected on the side of a planet, and by looking at her you can see how well you're doing. She displays a range of emotions, from joy to sadness to anger, depending on whether you're harming the globe or not. Nothing seems to irritate her more, though, than stabbing her in the eye with the mouse pointer. Do this and she moans, shouting 'Don't do that!'

THE GAIA THEORY The Gaia theory states that the Earth is a self regulating systemm – no matter what we do to it, it will survive. Life may not, but we can never hurt the Earth. This theory is one that, while never actually disproved, isn't wholly accepted by the scientific community. There may be a lot to signify its truth (like the fact that the Earth's temperature has remained constant for the last 3.6 billion years despite an increase in solar heat of 25%, and the fact that oxygen has formed 21% of the atmosphere for 200 million years) there are still no solid facts. In *Sim Earth*, Gaia keeps the planet in check most of the time, all you have to do is keep it favourable for life.

WORLD DECISIONS

Down the left side of the screen are the main game options, and this is where you really start to interact. The first icon lets you place things on the planet, such as lifeforms and different pieces of technology. If the time or climate are wrong, they will die out instantly. Nurture them, and they'll flourish. The final option is the Monolith. This large black shape – a la 2001, is used to promote intelligence within creatures, and before long the creature you use it on will become sentient. You can only have one sentient race at a time, and as this race passes through the different ages (industrial, technological, etc) it finally reaches the space race, at which point all of the creatures of that ilk leave the planet in rockets to colonise other planets, and the game begins all over again.

Other options include the raising and lowering of land, changing the scenery and, to my mind the most interesting, adding natural disasters such as tidal waves and virulent plagues. Try to imagine the effect that a major volcano slap bang in the middle of England would have on the coast of France. Or have you ever wondered what a meteorite the size of a city would have on the global infrastructure? In this game you don't have to imagine as you can create a whole plethora of disasters one after another.

There are four different scientific models to play with, too, which allow you to alter general fundamental aspects of the planet. The Atmosphere model, for example, allows you to change the amount of rainfall, the power of the sun and the strength of the greenhouse effect, whereas the Civilisation model lets you change the sociological aspects of the sentient race, be they working in agriculture or the arts. And this is all done by selecting the relevant option and then sliding a bar.

INFORMATION

There are almost limitless sources of information in the game, all of which have to be monitored at some point or another. There are a number of graphs detailing such items as the amount of nitrogen in the atmosphere to how many wars there have been in the last hundred years. In fact, the amount of information is the most daunting thing of all. You really do have to watch your back in this game, as disaster can come from any angle.

The key thing about *Sim Earth* is its leaning toward realism. It becomes fascinating, even addictive after a while just exploring the possibilities available. In that respect it actually forms quite a good learning tool, as well as being a hell of a lot of fun to use.

It's going to take a very long time to become completely familiar with the package, probably far longer than the couple of weeks I've had with it, but I'm loving every minute. This game requires more brainpower than any other I have ever played, but if you really want a challenge, and are ready to see what a simulator is all about, then get this the second it hits the shelf. Simply incredible.

buyers guide

release date	**Out Now**
genre:	**Simulation**
team:	**Maxis**
controls:	**Mouse**
numbers of disks:	**2**
number of players:	**1**
hard disk installable:	**yes**
memory:	**1 Mb**

OCEAN £29.99

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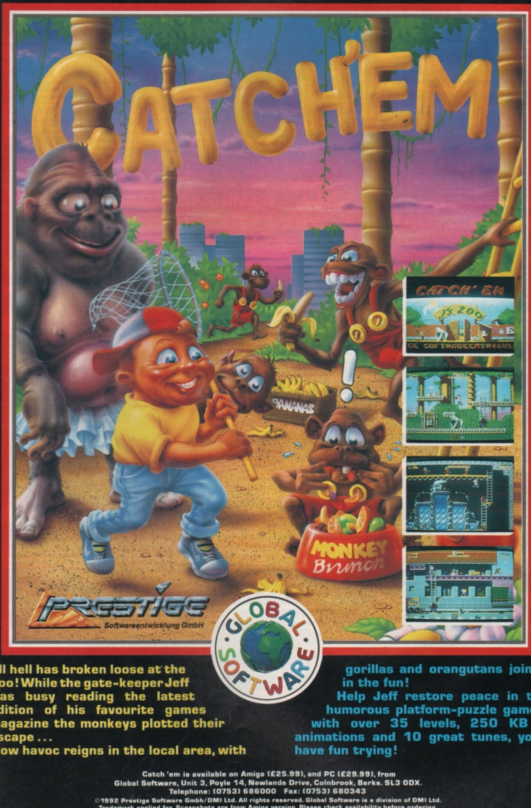
GRAPHICS	79%
SOUND	65%
LASTABILITY	95%
PLAYABILITY	93%

OVERALL 93%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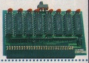

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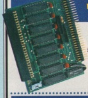

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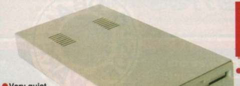

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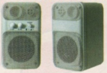

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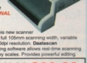

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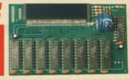

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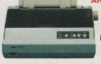

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LOTUS 3
THE ULTIMATE CHALLENGE

Undergoing a complete refit and spray job, Lotus 3 is set to provide a new benchmark in Amiga racing games. Tony Dillon revs up for action.

THE LAST LAP

Gremlin have made themselves a lot of money out of their Lotus license. Both the previous incarnations stormed the software charts and collected awards by the bucket full. Interestingly, both games attracted a slightly different audience. The original game's tracks were all looped, while *Lotus 2* had you racing through different scenarios with only the clock to beat. You either liked the first one and hated the second game, or vice versa, but rarely would anyone own up to liking them both. To get around this problem, Gremlin have included both options in this latest game, hoping to please all of the people all of the time.

Lotus 3 probably has enough in it to keep everyone satisfied – even those who happen to have the previous games already. Not only does the game allow you to play circuits or stages, as part of a championship or against the clock, it also has RECS (Race Environment Construction System), a novel way of generating new courses, but more on that later.

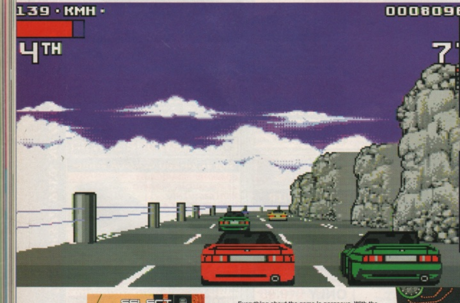
THEMATIC DRIVING

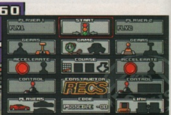
Both earlier titles had some 'theme' to them, some goal you had to reach to finish the game. In the first it was to complete all the tracks and come out on top. In the second it was to just reach the end. This new package is a pure arcade racing game, dressed up in millions of fancy options. For a start, there are 64 tracks already built in, ranging over twelve different backdrops and scenarios!

Not only do you race through fog, rain, snow, marsh and motorway sections a la *Lotus 2*, but there are also new scenarios such as mountain driving, a throwback to the early days of Accolade's *Test Drive*, where you speed your way along winding mountain tracks, with a cliff on one side and a steep drop on the other. There's also a futuristic racetrack, set over a chequered course which has you avoiding laser cannons and huge magnets which drag your car all over the shop (even though it's supposedly made of fibreglass!).

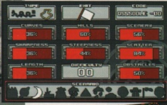
The racing sections are simply the best yet. There's no huge improvement over the previous two games, but any rough edges have been smoothed over. But then again, what did you expect? Shaun Southern has done this three times now.

This time there are three cars to race in – the Lotus Esprit, the Elan





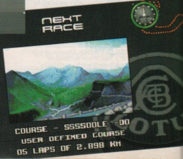
Above: The options screen in all its glory. *Below*: The Course Designer system lets you configure the track anyway you like.



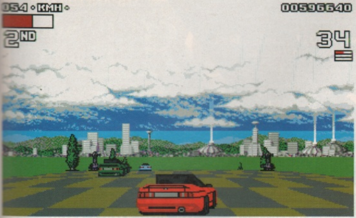
CODE OSSSOOLE -00
CURVES 36%
HILLS 60%
SCENERY 56%
SHARPNESS 36%
STEEPNESS 44%
SCATTER 84%
LENGTH 36%
DIFFICULTY 00
OBSTACLES 50%

SELECT A TRACK
05 00:00

Everything about the game is gorgeous. With the added bonus of the RECS system, there's an almost infinite number of tracks to race over, ensuring that you'll come back time and again. The four-player option whereby you can link up two Amigas for a head-to-head confrontation has also been retained.



COURSE - SSSSOOLE -00
USER DEFINED COURSE
05 LAPS OF 2.898 KM



and the futuristic M200, a turbo powered dream machine. All can be raced with manual or automatic gears, and can be controlled with either the keyboard or joystick, using either forward or fire as the accelerator. No-one can say that Gremlin haven't tried to make this game as adaptable as possible.

CONSTRUCTOR

Talking of being adaptable, now we come to the bit you're all dying to find out about – RECS. In any other game that allows the player to build a track, the form has always been the same. Tracks are always pieced together Scalextric style, by adding one piece after another until the basic shape is there, then its the turn of the hills and roadside objects to be added. This is a time consuming process, and one that becomes very dull after a while. On top of that, the track usually has to be saved to disk if you ever want to play it again!

RECS is a completely different way of doing things. Nine letters and two numbers are all you need to construct the course of your dreams, and between them there are literally millions of different courses available. The way it works is this. There are nine different statistics to each course, most of which are set as percentages. Aspects such as the amount of bends, hills and roadside objects are all set by clicking on a plus or minus button. On top of this, you can change the scenario between the dozen available and set an overall difficulty level which dictates the skills of the other drivers, fuel consumption, road handling etc.

Once you have set everything to your liking, you can make a note of the corresponding codeword and come back to play the same track time and time again. A fun aspect of this system is that you can enter names instead of codes such as TONYDYLAN20. Beat that if you can!

THE BEST

What can I say? It's just the best racing game yet seen on the Amiga. It's well designed, well presented and plays perfectly. The only criticism I can level at the game is an over-riding sense of deja vu when playing it. The 'been there, done that' sensation is hard to ignore as most of the elements have been seen in the previous two games. If I already owned a copy of either title, I'd be slightly wary of splashing out on what is essentially more of the same. But then that's your decision. It certainly stomps all over such recent offerings as Titus' Crazy Cars 3 and Core's Jaguar racer.

Overall, *Lotus 3* is streets ahead of the competition and deserves a place in anyone's software collection.

CU AMIGA SCREENSTAR

buyers guide

release date	**Out Now**
genre:	**Arcade Racer**
team:	**Magnetic Fields**
controls:	**joystick/Keyboard**
numbers of disks:	**2**
number of players:	**1/4**
hard disk installable:	**no**
memory:	**All machines**

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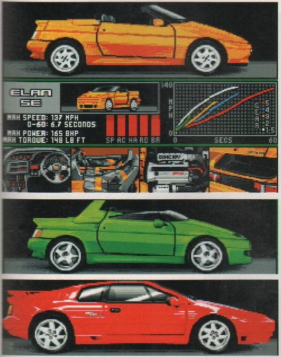

This time there are three cars to choose from, including a futuristic prototype model which is a turbo-charged dream machine.

Hello. It's the caption writer here. I've always wanted a real-life Lotus since I was a little boy, but what have I got? A Mini Metro! I ask you, is there any justice in life? I think not.

062 KMH
2ND
00001050
77

014 KMH
1ST
00000000
PLY1 AHEAD
76

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and ADVENTURE HELPLINE

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RUMOUR CORNER

Fill your mug with ale then mingle with the old warriors seated around the blazing log fire to hear rumours and scandal from all over the kingdom. Did you hear that Tony Crowther, the creator of the highly successful *Captive* and *Knightmare* games, has been locked in a dungeon beneath the offices of Mindscape Software with a huge bale of straw? Shock, Horror! It appears that the poor lad will not be let out until he spins all of the straw into another game which will make as much gold as his previous successes. I can tell you for a fact that he is 'spinning' all his hopes on a sequel to the *Captive* game which will be called *Captive II – The Freedom Fighters*.

Having been released from your own prison in *Captive I* you now decide to use both your knowledge and your battle-hardened androids to free the other political prisoners. The game is well under way now and here are a few of the ideas which will be incorporated into it.

Like its predecessor, *Captive II* will have infinite levels and a new storyline generated to go along with it, so you will certainly get your money's worth. There will be a new screen layout which allows you to have a view of two levels at the same time. In that way you'll be able to keep an eye on the monsters in the levels around you and be able to better plan your strategy. It is hoped that there will be an option to play the game with a friend via a modem link and in that case you'll be able to split your teams and fight the levels separately.

The game will be hard disk installable which is just as well as they plan to use all the colours the Amiga can support and it will take up a fair bit of space to store all the flash graphics they plan to cram into it.

HEROES WANTED

Pride of place in the Situations Vacant Board this month is an appeal from the town of Turnvale for a hero to come and save the population from an outbreak of Skorls. Sounds painful doesn't it?

LURE OF THE TEMPTRESS

Here is a quest which is doing very nice business in the next valley, beating up would-be heroes who are trying to unseat an evil enchantress named Selena. She is using a legion of mercenary monsters called Skorls who are as charmless as a troll with a sore head. Their hobbies include hanging people with nose-hooks and finding new ways to serve man. (Serve, as in serve on a dinner plate!) This is a relatively simple quest in which you adopt the guise of a young prince who must stomp around a beautifully detailed village solving the puzzles which will lead you to overcome the hated conquerors. Qualifications Required: If you can stand top quality graphics, good sound effects and have a low belly laughline then you could be just the hero for this quest. This has a high fun level and low difficulty rating, therefore applications will be accepted from medium grade adventurers.

Gurgling fountains and grazing goats grace the streets in *Lure oft he Temptress*. If you are looking for a job then come to sunny Turnvale for the quest of your life.

SHRINE OF KNOWLEDGE

Here in the darkened corner at the rear of the Tavern you'll find the Shrine of Knowledge. It is here that all prayers for help can be answered. Draw near and kneel before the flickering candles. Insert one gold piece into the slot and speak loudly into the wire grille on the wall. If your heart is pure (and your gold is purer!) then the magic Shrine will answer all your problems concerning RPGs and Adventures.

EYE OF THE BEHOLDER 2

Neil Yates from Walsall has been having trouble with *Eye of the Beholder II*. He's stuck on the first floor above the Temple of Darkmoon. After completing all of the lower levels, plus the enrolment test he can't open the strange, green shield door.

This door is the one behind the talking mouth which won't let you pass until you have the mark of Darkmoon upon your hand. A sign on the door says, 'The shield protects what lies beyond'.

The Shrine replies: You are obviously a worthy knight to have come this far, for I know that the lower caverns of the Darkmoon Temple contains monsters beyond counting. To have gained the mark of Darkmoon is also no easy task for it means you have defeated two Beholders in close combat. The green door which lies before you has no key and no magic will unlock its secret, only force of arms will lead you forward. The secret weapon which will secure the route is made from the same magical element as the door itself. Seek the mystical emerald hammer then use it to strike down the barrier.

KNIGHTMARE

Mindscape's *Knightmare* has been causing Steven Roberts from Lancashire a few problems. He's only just begun the game and cannot pass the trees which guard the entrance to the castle caverns.

The Shrine replies: There is but one tree which you can pass to gain entrance to the first quest. Seek the tree which is looking for its lost child and here is your entry point. The lost child which the tree seeks is none other than a single twig which lies on the ground next to a red wall switch near the entrance gate. Cast this item at the tree and it will disappear leaving your way clear. I will also give further warning to others in this quest.

Other items must be thrown at the remaining tree guardians and you must use the strongest member of your party to hurl these objects or the blow will not be strong enough to clear the way.

LEISURE SUIT LARRY

B. Berberg from Essex is stuck onboard an airliner with *Leisure Suit Larry II*. Having taken the parachute from the machine, he boarded the plane and gave the religious pamphlet to Ken the bore. After trying to open the emergency exit door with the knife, but to no avail, he ends up being arrested by the KGB when the plane lands. The snivelling toady ended his letter begging for help, so in a fit of generosity the Shrine has deemed to answer his pleas.

The Shrine replies: Are you on a diet? I ask because you obviously walked straight past the airport cafeteria without ordering a meal. I congratulate you on keeping your body clear of airport food, but unfortunately this has caused you to miss buying a meal spiked with a disgusting hair pin. Keep to your spartan diet and don't eat the food, but save the hair pin to pick the lock of the emergency door. Happy landings.

BARD'S TALE III

Terry McGowan from Huddersfield would like to trade a few hints from *Black Crypt* for help with *Bard's Tale III*. Take it away, Terry. 'On level 3 of *Black Crypt* I gained the mask of true seeing, but I still wasn't able to see the invisible monsters. The answer is to ensure that the person wearing the mask is the leader of the party. My problem in *Bard's Tale III* is that I don't know what to do with Cyanis. If I kill him he just drops a magic triangle which is useless to my party members.'

The Shrine replies: I thank you for your advice, but needless to say your words were of little help. Would you try to instruct a nightingale how to sing? The Shrine knows all, hears all and sees all. Still it proves your heart is in the right place. Pay close attention to my advice and perhaps you will be able to keep it there!

To complete Cyanis Tower you will need five roses and the Crystal Key. When you find Cyanis you can either kill him, or be a little more subtle and cast REST to cure him. Both of these actions will secure the magic triangle for you. You will need this triangle plus the five roses before you embark on Allirias' Tomb.

The triangle is used to get past the black crystal so guard it well. The location of Allirias' Tomb is 0N,7W. Heed also these further wise words regarding triangles. 'The squaw on the hippopotamus is equal to the sum of the squaws on the other two hides'. This piece of knowledge has nothing to do with your quest, but when times are hard it may cheer you up!

ELVIRA 2

Getting something out of an old boot is proving a tough challenge for David Baverstock from Plymouth in *Elvira II*. 'Can you please tell me how to get into the boot of Elvira's car that is parked in the car park?' he pleads at the end of his letter.

The Shrine replies: Your noble intentions speak well for you my son. Most enquiries I get from young knights involve acquiring access to other parts of Elvira. You are right that there is a problem getting into the boot of this wanton witch's car which makes it, or her, seem quite a handful. In fact the simple answer is that you must point and click the mouse at a point higher on the car to make the lid open. I know to others this may seem a trivial problem, but as with most problems everything is easy when you know how. Inside the boot you will find a pair of wire cutters – be careful with these. You will also find an open ended wrench for removing nuts – be 'very' careful with this!

MONKEY ISLAND 2

Kirsten Gillespie from Glasgow is a damsel in distress. She's high in a tree house on Booty Island where a bird has stolen a piece of the treasure map and dropped it into a large pile of other pieces and now she doesn't know how to get it back.

The Shrine replies: This problem requires someone to 'sniff' out the solution. Cast your mind back to when you left the mansion holding the map. Do you remember the big dog which sniffed the air and then sounded the alarm? Your wet-nosed friend obviously knows the smell of the genuine map, so I suggest you go and pick him up and take him to have a nose around the tree house.

RULES OF THE HOUSE

All weapons and willow wands must be deposited with the Inn Keeper for safe keeping.
No swearing, no spitting and no bawdy ballads allowed.
No Trolls allowed in the bar after 8 pm.
Good Ale – 1 gold piece.
All the ale you can drink, plus a straw bed – 4 gold pieces.
Warning. Anyone caught with a hand-held console will be forcibly ejected!
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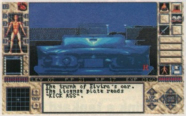
THE BARD'S TALE III
THIEF OF FATE

Now bawdy ballads are allowed in the Tavern, but in the *Bard's Tale II* you'll get lots of chances to sing for your supper.



The trunk of Elvira's car.
The license plate reads
"KICK ASS".

Before you throw yourself into the bowels of Elvira's film studios, make sure you search her car boot for some essential items.

If you're hanging around looking for assistance with *Monkey Island II*, then drop in to the Tavern and ask the Shrine of Knowledge for help.

The Magic Shop in *Quest For Glory* contains all that the aspiring magician will need before embarking on an Arabian adventure.

LORD OF THE RINGS

Interplay's *Lord of the Rings* is causing Mark McMinn and his hobbits a spot of bother. One of his companions has reached the House of Elrond in Rivendell, but Elrond has asked them to provide proof that the Black Riders have been dispersed. Where is this proof? His other company has reached the house of Tom Bombadil, but he doesn't know what to do there as whenever he attempt to go upstairs he's forced to go down again!

The Shrine replies: Search both sides of the river, for there lies the cloaks of the Black Riders in silent testimony to their defeat. There are four cloaks on each side of the river for you to find. Entering the house of Tom Bombadil will heal all damage of those in suffering. Tom will stay in the house until your party has visited Goldberry. If the Ring-bearer visits Tom's house and goes upstairs and sleeps in the bedroom, something extremely useful will happen.

I will speak also of the Barrow Downs for here I feel you will need help. There is a stone circle directly east of the Great Barrow which has magical properties. Dropping items within the circle will reveal many secrets.

DUNGEON MASTER

Colin Hyatt from Southampton is on Level 3 of *Dungeon Master* and cannot close a pit which blocks his way inside an area called the Vault. A sign beside the pit says, 'Cast your influence. Cast your might'. In another area called 'Time is of the Essence' there is a wall button and a pressure pad on the floor whose purpose I do not understand.

The Shrine replies: Experience tells me that by now you should have found the scroll which reveals the secret of the 'Open Door' spell. There is a closed door at the other side of the open pit. 'Cast your influence' by casting the spell which will send a bolt of power across the pit to open this door. Behind the door lies a floor pad which will shut the pit if you simply cast a heavy object with all of your might across the gap. Just inside the 'Time' area is a wall switch. Four paces down the corridor there is a wall which will disappear for a moment if the switch is pressed.

The trick is to press the switch then move sideways and finally forward as quickly as possible. Don't waste time turning to face the way you are going, for 'Time is of the essence'!

KING'S QUEST IV

As a newcomer to the world of adventure gaming, Sari Khumais is experiencing lots of trouble with the Sierra *Quest* games. 'Can I by hint books for them?' asks the little ingrate. 'I am playing *Kings Quest IV* and I am stuck between the forest and Genesta's Island. I have the peacock's feather, bow, fishing pole and a dead fish, but I can't find the bridle, the whale or the magic fruit. Is there a way through the man-eating trees?'

The Shrine replies: Sierra do indeed coin millions of gold pieces by selling hint books to weary adventurers and they will be only too happy to take your gold as well. You can order such books from any good software supplier. I would suggest that you would do better to buy some of the 'Quest for Clues' books which are also available from software suppliers or direct from Mindscape, Priority House, Charles Avenue, Burgess Hill, West Sussex, RH15 9PQ. Tel: 0444 246333.

Each of these books, (there are five at present) contain solutions to forty adventures including all of the Sierra games. In the Kingdom of Genesta your next move is to find the whale. This will mean that you must go swimming again as there are few whales to be found in the forest. Try swimming out to sea from different points on the beach and the whale will turn up eventually. Beware of the shark. Once you are swallowed by the whale, it is the feather which will help you to get out again.

There is a way through the forest, but the time is not right for you to be making this journey. Only when you have been into the Ogre's house will you have the object which will get you safely through the trees.

TRIAL BY FIRE

Mark Spiers of Bromley seeks help with Sierra's *Quest for Glory II*. He's gone into the Ladies Room in the Palace of Raseir, but then gets arrested. Well what did he expect to happen, the stupid schmuck!

The Shrine replies: There is no way to avoid being arrested once you have entered the Harem. I assume you got in by giving your visa and your change of clothes to the woman you met. Once you are in prison you will meet Sharaf and you must tell him about yourself in order to gain his confidence. You must now cast an 'Open' spell to get free from your cell. Sharaf will show you the secret way out of the prison, but don't forget to take all of your things before leaving.

If you have a problem, or perhaps you have a piece of scandal which you wish to whisper in the Rumour Corner, write to Tony Gill at:- The Troll's Head, CU Amiga , 30-32 Farringdon Lane, London EC1R 3AU

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LURE of the TEMPTRESS

If the Skorls are giving you a hard time in Virgin's new graphic adventure, Tony Gill is here to give you a helping hand.

THE KING IS DEAD...

Now you and I both know that beneath your rough clothes and grimy face, you are in reality a Prince. It's only a whim of cruel fate which has brought you to this damp and dingy cell – where you have been strung up by the Skorls!

The King is dead, the population live under the evil rule of Selena the sorceress, and you will only be around until your number comes up as the main course for the Skorl's banquet. Luckily you are pretty bright, and as the cell-block guard is as thick as two short planks nailed together, it shouldn't take you long to create a diversion and escape. Locking the guard in your own cell will give you ample time to examine the surrounding cells, so take your time and make sure you don't miss anything – that includes the coin inside the sack next door! In the nearby cells are the first of the many characters you will meet in this graphic adventure, and by talking to them you will find out more about the castle and the secret passageway which leads to freedom.

A HELPING HAND

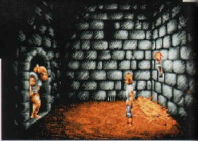
Throughout the game you will come across problems that require the help of someone who is sneakier, and more devious than your own noble self, and to help fill this gap the game's writers thoughtfully decided to provide you with such a companion. As the editor of CU Amiga was too busy to take time off to assist, a streetwise urchin called Ratpouch will follow you wherever you go. Ratpouch is full of useful talents and rude humour, and he can be used to carry out simple tasks by using a menu of simple commands. You'll be able to instruct your newly-found friend to make a hole in the cell wall and soon you'll be into the sewer outlet and on a slippery, but smelly, ride to freedom.

LOOKS CAN BE DECEIVING

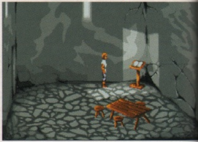
Outside the castle walls is the sleepy, but beautifully drawn, village of Turnvale. Although all the quaint little houses and inns have comfortable interiors, the inhabitants of the village seem to spend their time walking in endless circles along the cobbled streets. Stand on any street corner and eventually everyone you could ever wish to meet will walk past. Exceptions to this rule are the hardened drinkers of the Severed Arms and the Magpie Tavern. The Old Trout ale which is sold in the town pubs seems to keep beerlovers glued to their seats, but at least it means you'll know where to find them when you need them.

MORE RABBIT THAN SAINSBURY'S

I hope you are a friendly type who likes meeting people because that is something you're going to be doing a lot of in this game. Each time you 'Talk' to a character you will learn something new and this will give you more to talk about with the next NPC (non-playing character) you bump into in the street. There are people like Gwyn, the town gossip, who will be only to pleased to tell you everything you could ever wish to know as soon as you stand in their way, but there are others like the two wandering monks who will ignore all your attempts to interrupt their meditations. The first rule of this game is to talk to everyone about everything and as soon as you find out something new, talk to everyone again concerning your latest titbit of information. Sometimes you may need to buy the locals a couple of drinks before they'll open their lips, but the money will be well spent. At a later stage you will have to speak to the tight-lipped religious brothers, but before you stand a chance of having a word with them you'll need to get inside the Monk's House which is normally locked. Although it is possible to slip inside



It really isn't your year! At every turn there seems to be another monster to vanquish, another demon to slay. What a life.



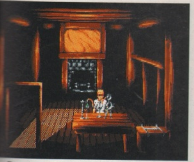
There is not a lot to be found in the Monks House, except for a message saying that there is not a lot to be found! However this is the one place where the monks will reply to your questions, so take a pew and wait for their return.

when one of the monks is also entering, you'll get in easily later on in the game when the time is right.

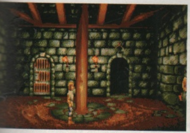
USING YOUR MOUSE TO REVEAL ALL

Moving the mouse cursor over the screen will highlight the items of interest which can be examined. Once you have examined an object this may reveal further items which can then be highlighted and used. For example, the barrel in the prison contains drink which can be used to fill the empty bottle nearby, but until you examine the barrel you will not be able to find or use the tap. Other objects will only become visible once you know of their existence. For example, examining the apparatus which is found in the shuttered house in the town square will tell you very little, until you also read the magician's diary which describes the equipment in detail.

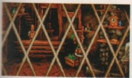
There is a strange smell in the Monks house. Is the smell caused by the burning of incense, or the fumes of Brother Whelks' 'Wacky Baccy'? Is it an unfortunate side-effect caused by the monks vegetarian diet of lentils and cabbage?! In fact the smell comes from a mixture of herbs which Brother Whelk carries in his robes. Herbs play a large part in the game, because your beautiful bride-to-be is the manageress of the local Herb Shop, and with the help of her magic potions you will solve one of the main problems in the game. Of course you're not going to see any of this until you rescue the fair Goewin who has been dragged off to be interrogated by the Skorls in the Town Hall. The magician's apparatus will give you the solution to this problem, but first you are going to need: the magician's diary, a tinderbox and an empty flask. The diary can be easily obtained by simply talking to the correct person, and the tinderbox is just waiting to be picked up from the floor of the blacksmith's forge.



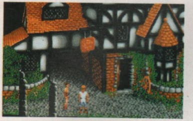
The mystery of the Magician's apparatus will be revealed once you find a description of its mysterious purpose in the missing diary.



There is a way out of the castle dungeons through the sewer pipes, but alas it's too late for the poor guy who has been strung up by the Skorls (Ouch!).



If you think the village shopkeeper seems like a very nice man, try taking a peek through the shop window and see what he does!



This is the village. You are not a number, you are Diermot and you've landed yourself well and truly in it!

Finding the forge is not so easy as its entrance is slightly obscured, but if you listen for the beat of the blacksmith's hammer you'll find it less than a stone's throw from his favourite pub. Getting a full flask isn't difficult, even though you will have to engage in some shady dealing with the town sneak called Mallin to get it. The problem comes when you want to empty the flask. In the world of men you can simply empty a flask if you don't like what's in it, but in the awkward world of adventures you're going to have to find someone with an iron constitution to drink the fiery brew it contains.

OPENING THOSE DAMN DOORS

Locked doors are the bane of the everyday adventurer and the fair village of Turnvale has more than its fair share. The town's drunken philosopher whose job it is to hold up the wall in the centre of the village with his head, also holds the key to at least one door (though even this will require the skills of your sneaky friend to use it). The door to the Town Hall can only be passed by the evil Selena – or at least someone who looks like her double! The Weregate is guarded by two gargoyle statues who will only open the gates for a maiden who can speak the magic words. To find these magic words have a chat with an old dragon fighter who has been that way before you. No sooner will you have passed through the Weregates than you will find that yet another sequence of doors controlled by moveable skulls await you. You'll soon find that you cannot pass through these rooms without the aid of another pair of hands, so it's damn lucky that the fair Goewin has come with you. (Ratpouch at this point has decided to spend his time trying to persuade the local bartender to sell him a drink rather than following you into the Dragon's Den.)

Make sure you save your game position at this point as it's possible to think you've solved the door puzzle and move forward to a position from which there is no way back. Let your rule be, 'Do not to move forward until you know you can open the door that just slammed behind you'. The solution isn't at all difficult, you simply need to note what skull controls what doors. Having returned in triumph from the Weregate you'll be faced by yet another route blocked by the imposing black steel doors of the Skorl Castle. To get past this armour-plated problem you should pay close attention to the wandering Skorl guards as one of them is acting very strangely and will provide a clue to the problem.

ALWAYS BE A GOOD GUY

Dealing in stolen goods will cause you problems, so if some shifty character asks you to transport some 'hot' item for him, take it straight to its rightful owner instead. It's also the sign of a 'nice' adventurer to sit and listen to silly old grannies who 'witter' on about the good old days, what they did when they were a little girl, and give you graphic details about their cat's operation. Smile and look interested because you never know when they will tell you something of vital importance – like where you can go herb picking for a start!

THE CITIZENS OF TURNVALE

Take a stroll around the village of Turnvale and you'll encounter all manner of weirdos and degenerate freeloaders.

GWYN – A tight-lipped woman who wouldn't say a bad word about anyone – unless you asked her!

RATPOUCH – A young jester condemned for poking fun at the Skorl invaders. When you are in deep trouble and can't think what to do next, try asking Ratpouch his opinion. He may not have a sensible suggestion, but his jokes might make your situation more bearable.

GOEWIN – Pretty as a picture and the object of your youthful desires. Goewin mixes potions in the herb shop and is ready at the drop of her eyelashes to follow you into every adventure. If you are a Prince in disguise, the 'smart' money says that Goewin is going to turn out to be a long lost princess before the game ends.

BROTHER WHELK – Not much of a conversationalist, but this monk has a few items of information which will help you save the day.

BROTHER TOBY – The second of the religious order who wanders the streets of Turnvale. Find his missing book to get vital information .

MALLIN – The town thief who has his fingers into everything illegal. He doesn't care who rules the country as long as it doesn't interfere with his 'business' dealings.

ULTAR – This beefy barbarian is an old dragon slayer, but as there doesn't appear to be any old dragons left to slay he has decided to spend his days drinking Old Trout ale in the Severed Arms Inn. Being as drunk as a skunk, he'll say the silliest things at times, but his experience in the dragon-killing business means that he does know a thing or too.

EILEAN – Being able to knit and drink at the same time seems to be this woman's only skill, although she does seem to have a shady past.

LUTHERN – The village smithy is strong in the arm and thick in the head. He is a well meaning type, but those citizens who followed his advice in the past have ended up in the Skorl's dungeons.

GRUB – Is he a drunk or a deep-thinking philosopher? Whatever he is, Grub spends his days lying in the sun and spouting weird riddles which don't seem to make much sense to anyone but himself.

CATRIONA – The old granny who sits by the warmth of the smithy's fire is only too willing to waffle on about old legends and fairy stories. Resist the temptation to stick her up the chimney.

EWAN – The village storekeeper is a very odd cove who talks to his vegetables and tells rude jokes to his customers about cucumbers. If you try and spy on him through the shop window you'll find that he also has an ample supply of rude gestures.

SKORL PATROL – The muscle-bound Skorl patrolmen who stalk the village don't have much to say. 'Shutup!' will be the only reply you' ll get from these scintillating conversationalists.

MORKUS – Definitely a shady character, who is probably in the pay of the Skorls. Don't expect to get much help from him unless you are prepared to pay for it.

NELLIE – Landlady of the Magpie Inn. This mature lady has got a soft spot for Ratpouch, but she will still not sell him a beer, no matter how hard he pleads.

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In the next forty pages anything can happen. Every month in this section, we will be exploring strange new software, seeking out intelligent peripherals and inviting you to...

GETSERIOUS

90 Sound Enhancer
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118 Rocgen Plus
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121 SSL A5000
122 Art Gallery
124 MovieSetter
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TOP RATED

The top rated accolade is for non-games products scoring over 90%. They will definitely be worth the money and are likely to act as a benchmark for future releases.

SOUND ENHANCER

Nick Veitch listens to a new way of enjoying Amiga sounds.

For further info, contact: Genloc Ltd., Unit 8, Bradley Hall Trading Estate, Standish, Wigan, WN6 0XQ. Tel: 0257 472887

COULD YOU TELL IF IT WAS FILTERED?

Everybody knows that the Amiga has a built-in sound filter designed to reduce tinny Treble and boost the bass. Everybody who has ever heard it also knows that the machine sounds a lot better when the built-in filter is turned off.

The trouble with the internal circuit is that it is a very primitive low pass filter. This means that all the frequencies above a certain point diminish – bye bye breaking glass samples and hi-hats. Because the frequency response is set you can't even adjust it. The only thing you can do is turn it off, which is also quite annoying, because then your sounds may sound like they are being generated from the bottom of a Cambell's soup can. There have been a few solutions to this problem, and the best of these is still probably the most simple – turn the filter off, get some phono leads, buy a very expensive Rotel amp with a built-in graphic equaliser (for equalising the graphics) and plug it in to the back of the Amiga.

This is a good solution, but can be a bit tricky if a) you don't have pots of money or b) somebody else is using the Hi Fi to listen to Betty Boo. Perhaps the most reasonable solution then is to replace the filter by turning it off and introducing a new filter between the Amiga and the machine.

PYRAMID POWER

The Pyramid *Sound Enhancer* connects, via a set of phono sockets, to the Amiga. Another set of phono leads jack out of the back of the interface which can then be plugged into whatever amplifier you are using. The unit takes its power from the serial port. It simply plugs in and has a through connector for any modems or things that you might actually want connected to the serial bus.

There are only two controls on the unit: an on-off switch and a selector control. The selector gives you the ability to change the cut off frequency of the filter. This means that you can more or less select whether to generate a more bone-thumping bass sound or a tooth-rattling high pitch treble. There is only one control so the filter is more analogous to a 'tone' control rather than to separate Treble and bass sliders. You won't believe the difference when you try it out.

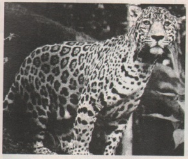
Now not only will the neighbours be able to hear the music to your favourite game well into the night, they'll also be able to appreciate all the subtle nuances of its composition.

82%

AMIGAMANIA PROCLIPS

You don't have to own some expensive hardware to get your hands on decent quality artwork.

If you want more information, contact: Amigamania, 88 Blackbull Road, Folkestone, Kent, CT19 5QX. Each clipart set costs approximat ely £7, the number of disks included may vary.



PICTURE POWER

Pictures are important. They form a vital part of many pieces of work – newsletters, posters, packaging, slideshows (obviously), demos, multimedia – the list of uses for computerised images goes on and on.

Which begs the question of how you get hold of them in the first place. Well, the traditional digitiser is no longer as expensive as it once was, with units at around £100. Then there are always scanners, particularly the cheap but effective hand-scanner, also priced at around £100.

FIND THE TIME...

But these solutions still leave you with the problem of trying to find a suitable image to scan or digitise. Even then you will have to be well practised in the use of such a system to get consistently good results, which could take some time.

The obvious answer is to get some clipart. Now the usual problem with clipart is that you still face some of the same compromises – you can't depend on getting the exact image you are looking for, only something that comes reasonably close. Well, there's not much to be done about that. The second thing is that a large number of the images will be exactly what you want but in some unsuitable format.

The Amigamania clipart disks are all categorised fairly well, with sets on such diverse subjects as wildlife and cars, with about 30 or so pictures on each disk.

SO LONG AS IT'S GREY

Each picture is a 16-colour grey High-res interlace image, though very few of them are full screen. The images are quite disappointingly inconsistent though. They are all obviously scanned in from a magazine or book but whilst some seem to have been done with great care, others are cropped badly and carry the tell-tale diamond patterns signifying a screen clash.

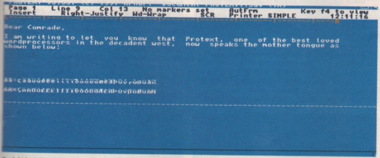
Given the price of these disks, the sets are fairly good value, but their use is limited and they are only really suitable for use in very small newsletters. But then again, after a while it is almost as cheap to buy your own hand scanner and pay a visit to the local library.

64%

• •

PROTEXT RUSSIAN

By using Russian on your Amiga you can help some of the children affected by the Chernobyl disaster.



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Page 1    Line 9    Col 13    No markers set    AutFrm              Key f4 to view
Insert      Right-Justify  Wd-Wrap       SCR    Printer SIMPLE          12:11:16

Dear Comrade,

I am writing to let  you  know  that  Protext,  one  of the best loved
wordprocessors in the decadent west,  now  speaks the mother tongue as
shown below:
```

It might look like gobbledygook, but this is, in fact, a Cyrillic alphabet.

COMRADE ARNOR

Well Comrade, we all know what an advanced piece of word processing software Arnor's *Protext* is, but you probably weren't aware of exactly how clever a program it is.

The Amiga is well known for its font support, but if you happen to want a font which contains characters other than those of the standard western European languages you will probably be out of luck. In attempt to redress matters, and also do a bit of good at the same time, CU Amiga reader Mr. G N Martin has been busy updating *Protext* to provide a little more user-friendliness for our eastern European cousins. He has set himself the task of creating character sets for the Cyrillic alphabets of Gost, Russian, Croatian, Serbo-Croatian and Greek languages. (The modern Cyrillic alphabets now contain the following number of letters – Ukrainian (33), Russian (32), Bulgarian (30), and Serbian (30). The modern day Russian has also been adapted to several non-Slavic languages in the C.I.S.)

WHAT A CHARACTER

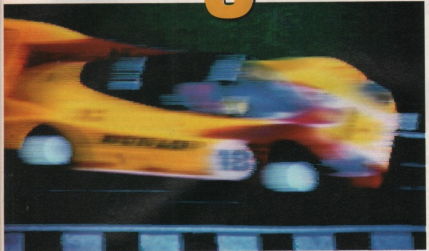
From within *Protext* version 5.5, the chosen character set is fully integrated, and can be displayed without side effects on-screen by means of the ALT key.

It's all very well being able to see the characters on the screen, but Mr. Martin has also managed to create a set of printer drivers which will output the characters directly to a dot matrix printer. This is no easy task, and the printers currently supported are the Star and Citizen 'S' range, with limited support given to Epson and NEC printers amongst others. More printers should become supported in due time.

Mr. Martin is going to all this effort to help raise some money to bring children from the area affected by the nuclear accident in Chernobyl to England for a short stay, so if you're interested in these curious additions to *Protext*, or if you think you can help Mr. Martin in achieving his goal, you should contact him at 121 Dracaena Avenue, Falmouth, Cornwall, TR11 2ER.

70%

image master



The Motion Blur special effect will add movement to the most static of images.

As Neil Kinnock discovered, there are some times when your image just isn't good enough. John Kennedy uncovers the latest version of Black Belt's 24-bit image processing suite.

THE SHAPE OF THINGS TO COME?

Not so long ago, the Amiga world was introduced to the concept of 'TrueColour', the principle of displaying objects using 16 million plus shades of colour, and therefore generating images which to all intents and purposes were photo-realistic. At almost exactly the same time the price tag for this privilege was revealed, and unfortunately for everyone it was on the wrong side of £1000.

Lack of money has always been a close relation to the mother of invention, and several ingenious cost cutting methods of obtaining lots of colours for substantially less money appeared – one of which was the black box called HAM-E. (Another system is DCTV, but more on that later). HAM-E worked on the same principle as the normal Amiga Hold-and-Modify mode, which is to say it fooled the hardware into providing a larger palette than one would normally expect. Whereas the standard Amiga HAM mode works with 12-bit colour (4096 shades), HAM-E was capable of 18 or 24-bit colour: TrueColour on a budget had arrived. A strange twist in the fortunes of HAM-E has meant that you will actually have great difficulty in getting hold of one these days, but there will be plenty of them about nevertheless. (And if you don't know what I'm talking about, you obviously haven't been following our news section.)

MASTERING YOUR IMAGES

The problem with having 24-bit colour displays is that it's not easy to find a program to make the most of it. *Deluxe Paint* will work with HAM mode, but that's only 4096 colours – not the 16,777,216 which 24-bit images use.

Black Belt realised this, and gave HAM-E owners a program called 'ImageProfessional'. This program is also available to non-HAM-E owners, and also to owners of the FireCracker 24-bit board in the form of *Image Master*. The difference is, we have to pay for it.

Image Master, or *Image Master F/c*, is a fully featured 24-bit image processing suite. It provides more features than you might ever use, and it's probably the most advanced graphics program to appear on a home computer – ever.

Before you can run *Image Master*, you'll need to make sure your Amiga has some extra memory under the bonnet. At least 3Mb, and preferably much more, will be needed to let your imagination even begin to walk riot, never mind run. Furthermore, some kind of turbo-charging in the form of an accellerator card would not be a bad idea. Incidentally, buying an accellerator card and then populating it with 32-bit wide super-fast RAM is an extremely intelligent thing to do, as not only will it probably cost less than buying normal fast RAM, but it will make your Amiga go a heck of a lot quicker too. A version of *Image Master* is available to take advantage of the maths co-processors which most accelerator cards support. It almost, but obviously not quite, goes without saying that a hard drive will make the prospect of storing those rather large 24-bit image files a lot more attractive.

Image Master has been constantly updated since its conception, and the version reviewed here is tentatively called 'Version 9, Revision 13'.Having your software constantly improved is a terribly Good Thing, but unfortunately also means that the manual is always out of date. The disk on which the review copy was supplied came with a

The intelligent morphing features can generate ANIM files as well as pure 24 bit images. With time, you can achieve much more impressive results than these!

rv9

manual addendum which was 77 pages long! This is pushing the 'mean time until new manual reprint' factor well into the red, as many of the illustrations and examples in the manual are redundant. Black Belt promise to provide registered owners with new manuals, but at the current rate of expansion they will have to provide a book shelf to put them all on. I'm all for saving forests, but I think I'd rather have an accurate manual printed on re-cycled paper than an out-of-date manual and a sheaf of DIY printed file paper.

ALL SYSTEMS GO

When you eventually get *Image Master* running (it seems to take an age, even when loaded from hard disk), you will be presented with a mostly blank screen with a range of buttons at the bottom. These gadgets form the main control panel of *Image Master*, and will be replaced with different options depending on the stage your processing has reached. It's rather reminscent of NewTek's paint packages, as the gadgets float over your work.

Normally the first step in an *Image Master* session is to load an image, so the 'File I/O' button is the one to go for. *Image Master* will load all types of IFF file, and is especially fond of 24-bit flavoured ones. If you want to load a non-IFF file, you'll have to use a slightly different approach, which we'll get to in a paragraph or too.

Assuming the image file is kosher, it will be loaded and, if need-be, expanded to become a 24-bit file. Eventually it will be displayed, and the reasonable, but slow, HAM representation mode is usually the best display method to view the result. Various dithering methods are used to give the best possible display, but I found that I couldn't switch them totally off. For example, a snapshot of the Workbench saved as an IFF appears with dithering, even when displayed in 4-colour Hi-Res mode – very strange. Also annoying is *Image Master*'s habit of grabbing control in a multitasking environment – for example, as I write this text on *Cygnus Ed* with *Image Master* running in the background, my cursor is occasionally taken from me as *ImageMaster* makes itself active after some background processing.

FUN TIME

Image Master is not limited to one image at a time. In fact, you can have as many images present as you have memory to store them – which usually means two or possibly three pictures, as 24-bit images take a lot of space. A particularly clever idea is the way in which the images are stored: the differing sizes and resolutions of the pictures are completely hidden from the user. If you load a 1024 by 1024 file, or a 32 by 32 brush, they will still take up the entire screen when displayed. This makes combining images of different resolutions extremely simple: if you want to place a non-interlaced picture of a face over an interlaced background image, you don't have to worry about rescaling the images to matching sizes.

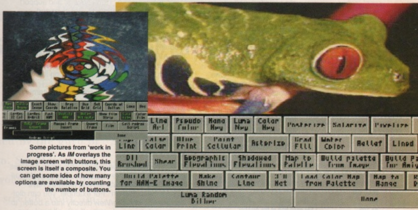
Each image has its own buffer, which may be dealt with entirely separately from any other. Furthermore, small buffers may be 'clipped' from existing images, processed, and finally returned to their parent. As each clip is re-scaled to fill the entire screen, this is a very flexible way of providing a powerful magnification tool.

With the image(s) in memory, the real fun can begin. You have three main menu options: compose, paint and process – you should be able to work out which functions come under which headings, but you'll certainly be surprised with the number of options available.

Composing images actually refers to the process of merging or blending two images into a composite. You might think this is a pretty straightforward task, but *Image Master* provides so many different options that at first you will be spoilt for choice. One of my favourites is a 'rub through', which allows one image to overlay a section of the other. If the images are complicated, drawing an outline will exactly indicate the area to blend. With the automatic shadow function enabled you can achieve some very pleasing pictures. For exact control over blending, a buffer can contain information which can be used to alter the depth of blending over the entire image.

Take one brother, one *Image Master* explode function and Wham! Some unsightly zits were also removed with the 'Remove feature' button.

Also in the compostion section is a 'morph' feature, which could fill an entire magazine article in itself. Forget the rather useless morphing features of *Deluxe Paint 4*, this morphing is more along the lines of the effects seen in the film 'Termimator 2'. Before the morphing begins, you must specify positions common to both images: for example, if you are producing a morph sequence between two faces, you would set points around the eyes, nose, mouth and ears. When the images blend, the face smoothly 'evolves' over the frames. It's quite an amazing effect, although for a long animated sequence an accelerated Amiga or long overseas holiday is a must.



Exact Image
Show Coords
Drag Relative
Use Grid
Set Grid
Coords at Button
Luma
Lo-Res 32 Col
Lo-Res 8-Bril
Fast HAM
Show Film Strip
Color Film
Manual Frame Insert
Insert Frame
Film
Edit redraw Script
Frames
Done
Line Art
Pseudo Color
Mono Hwy
Luma Hwy
Color Hwy
Posterize
Solarize
Pixelize
Line
False Color
Blue Print
Paint Cellular
Asterize
Grad Fill
Water Color
Relief
Lined
Oil Brushed
Shear
Geographic Elevations
Shadowed Elevations
Map to Palette
Build palette from Image
Build Palette for HAM-E Image
Make Shine
Contour Line
Net
Load Color Map from Palette
Map to Range
Luma Random Dither
Done

Some pictures from 'work in progress'. As *IM* overlays the image screen with buttons, this screen is itself a composite. You can get some idea of how many options are available by counting the number of buttons.

Image Master v9

Some of the cruellest image processing features ever invented are yours to experiment with. In this case, a quick mirror and go with the 'caricature' function.

DUE PROCESS

Image processing is what it's all about, and *Image Master* has the usual collection of high pass, low pass, convolution and noise filters. The part of the screen which is to be processed can be easily selected – if it's not the entire image or some other regular shape, you can draw an outline yourself to form a mask. Masks can be saved and loaded, so once you've got it right you won't need to re-draw them more than once.

'Dome' is a similar to painting an image on a ballon and blowing it up. Dread to think what would happen if it burst...

All the regular image processes you could require are provided, and should you want one that isn't, there's always the possibility of writing your own. ARexx programmers – which we should all be by now – will have a field day, as all functions are completely accessable. One task I had set myself meant I needed to increase the constrast of an image as a function of its depth: the further down the image, the less contrast. This was done within a few minutes with a simple ARexx script:

```
/* ARexx macro to alter contrast depending on Y position */
message "Ready to start"  ; Message to user
autoredraw 0          ; Only redraw image at end of processing
con=-100              ; Initial constrast value
y=0                   ; Initial Y co-ordinate
do 100                ; For each line of the display..
   rect 0 y 319 y+2   ; Select the area to process
   contrast con       ; Process it
   y=y+2              ; Move down image
   con=con+2          ; Alter contrast
levelend              ; End loop
autoredraw 1          ; Redraw image
redrawend             ; Stop
```

RATHER SPECIAL EFFECTS

The special and geometric effects provided by *Image Master* are truly amazing, easily as good as, or better than, other systems such as the Mac's *PhotoShop*.

At last I can see what happens if I drop a small stone onto a picture projected onto water, or perform spiral swirls, inwardly pointing explosions or even motion blurs. There are too many effects to list in detail, so I hope the example pictures will give you a taste of what's possible. Remember that the effects can be applied to multiple frames if required, so the ripples caused by a dropped stone can spread out overtime.

PAINT FUNCTIONS – CAN YOU TELL WHAT IT IS YET?

Image Master's painting section is a tad disappointing, for it's far from being a version of *TV Paint*, nor even a 24-bit *Deluxe Paint*. Painting is possible with a brush either created previously or lifted directly from the displayed image. Freehand line drawing is possible, although the screen refresh rate means it is not an instantaneous process. Amiga fonts (bitmapped and scaleable) may be added to the image, and with the various graduated fill options you can add some really snazzy sub-titles. The paint section isn't below standard by any means – how many 24-bit paint programs do you have, anyway? – it's simply that the other functions are so powerful that a non-instant painting program looks a trifle drab by comparison.

EXPANSION

As I kept hinting at before, expanding the functions provided by *Image Master* is a relatively painless task. By cunning use of the ARexx interface, separate program 'modules', called Public Interface modules in Black Belt-speak, can be invoked at any time by hitting a function key. Assuming of course that you have ARexx already running – Workbench 2 will do this as standard, Workbench 1.3 stalwarts will have to buy either ARexx or the full upgrade to WB2.

The usual approach is to call-up a list of the ARexx modules, select one and stand back. Supplied PI modules include JPEG and Imagine image format loaders and savers, animation support files, Vista support files, PMBC and Rendition loaders and savers, Targa savers, and support files for the GVP, Harlequin, Resolver and FireCracker video boards. Quite a lot really!

For programmers, C source code example files are provided, and I suspect that writing your own modules – for example, to provide support for the new AVideo 24-bit board – shouldn't be that difficult. Furthermore, if you can't manage it yourself, you can count on someone else doing it for you soon.

The PI modules might not have the same degree of immediacy and integration as say, ASDG's Loaders and Savers, but they have their advantages. If you can program, you can write your own, and any new ones which do appear will probably be public domain.

FANATICS

Image Master is especially flexible when it comes to differing hardware standards. This is party due to the PI modules, but several features have already been 'built in'. For example, you can digitise images with *DigiView* directly into a buffer, to save much time and sanity. If only all hardware manufacturers would add ARexx interfaces to their digitisers...Support is also given for loading DCTV images, but Black Belt's almost fanatical dislike for this rival system is hard to disguise.

CONCLUSION

It's about time that the Amiga received the graphics software it deserves,and *Image Master* is a program that will be with us for many years to come. If working with computer graphics is your job, or simply your hobby, then this is one piece of software that you can't do without. You can almost guarantee that it will work with whatever hardware system you have, as long as it includes an Amiga with 3Mbs of Ram. It's worth buying a 24-bit board (or dare I say, a DCTV) just to see the results.

CU AMIGA TOP RATED

IMAGE MASTER V9

. . . at a glance

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EFFECTIVENESS	96%
FLEXIBILITY	95%
INNOVATION	80%
OVERALL	**94%**

IMAGE MASTER VERSUS ASDG'S ART DEPARTMENT PROFESSIONAL

At last some competition on the 24-bit graphic front! Both *Image Master* and *Art Department Professional* offer some very advanced features, and both will set you back a few bob. Is it really necessary to have both?

Well no, of course it isn't. I can't deny that it would be nice to have both, because no one package is perfect at everything. For example, to me *AdPro* 'feels' more reliable, and has better loading, saving features. Until someone writes the relevant PI modules for Image Master, *AdPro* will continue have to more loading and saving options.

Image Master supports animation in much the same way as AdPro does – as an afterthought. Where *AdPro* has FRED (reviewed last month), *Image Master* has Film View. Both get the job done, but both are rather fiddly to use. And neither have good printed documentation at the moment!

Image Master's PI modules will offer indefinite expansion, as any type of feature may be added, be it loader, saver, special effect, or even an interface to a digitiser or video board. *AdPro*'s Operators, Loaders and Savers are much more fixed in their design, and cannot be written by the user.

If I had to choose between them, I would choose *Image Master* – it comes with many more effects, a more intelligent multiple image buffer system,and many more effects.

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NeuroP

'Don't bother fetching that brain from the lab, Igor – I've got NeuroPro running on my Amiga!' cries Dr. Franks, as the latest in silicon intelligence gets the CU treatment. Can your Amiga think for itself?

A NEW WAY OF THINKING

It used to be Conway's *Game of Life* which attracted techies to their keyboards. Then it was the turn of that 80's icon, the Mandelbrot set. Now it seems that Chaos theory has just finished doing the rounds, which can only mean one thing: with the constant threat of 60's and 70's fashion revivals it's only fair to expect a rash of neural network programs.

The hip to the beat software house MegageM love all things techie – their catalogue consists of some of the best 'techieware' you'll find: all simple enough for even civil servants to use, but still state of the art in their potential power. If you like your Amiga to run the software equivalent of little black boxes with coloured flashing lights, you're in for a treat with their latest program.

NeuroPro 2 (*NPro* for short) comes on a single disk with a 40-page manual and some impressive statistics: 'Three layer backpropagation neural networks, one to 64 cells per layer, 192 cells per network, up to 8,192 connections per network and up to a speed of 20,000 connections per second'. Sounds good? It certainly does, I just wish I had another program to compare it with. Do you know if 20,000 connections per second (con/sec) is fast? I'll tell you later...

When you load the software – for which you'll need an Amiga kitted out with 2.5Mb of RAM and a maths co-processor – you will be greeted with the screen that you're going to be spending a lot of time gawping at.

The top section of the display is taken up by coloured boxes representing the degree of error inherent in the network and its guesses – the closer to black, the better. The central section provides control over filing operations and network size, and the lower area is where the inputs and ouputs of the network are displayed. Over to the right is a pause button, and also the area that keeps you updated on the progress of the current training procedure. Admittedly it all looks rather daunting, but you soon get the hang of it. Full marks for one of the least flickery interlace screens in a long time (but couldn't we have a non-interlaced hi-res display, pretty please?)

Before you can start to use *NPro*, you'll need to read the manual. Thankfully, this is not a major task as the chatty little book contains several tutorials which will soon have your Amiga thinking away to itself – and sometimes out loud. In fact, the first tutorial is actually built into *NPro*, so it takes nothing more than a single keypress to start it going. Before long it will be able to translate English text into Spanish – or at least the numbers from nought to thirty-one.

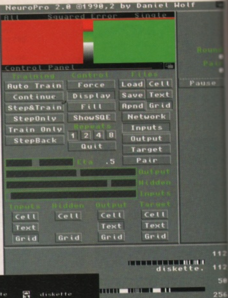
TRAINING YOUR NET

Neural Networks work by associating pairs of inputs and outputs. Think of it like teaching a young child to read: you show it a picture of a cow and then say 'cow' several times. Hopefully the child will retain this information, and next time it sees a large, fresian dairy herd will jump up and shout 'cow' at the top of its lungs. So it is with a neural net – you provide input and then provide a 'target' reponse – what you would like the net to reply. Each pair of data must be introduced to the network many, many times in order for the various internal connections to be fine-tuned. In fact, you may need to present the data hundreds or even thousands of times before the net can learn to match them.

When the example network is first trained, the outputs are complete gibberish – not surprising really, as the network itself is a totally random jumble of connections. After a couple of minutes, the output starts to make more and more sense, and eventually there will come a time when the net will be able to correctly identify the input with 100% accuracy. This fact alone is quite amazing, although the programming cynics amongst you will probably have shrugged shoulders and said 'so what, a simple look-up table could do the same'.

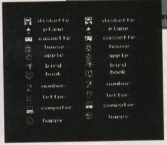
Indeed it could, but a table is severely limited in that every possible input must be catered for: the neural network is different. Give a network an input which it has *not* seen before, and it will make a very good guess at working out what it is: exactly like when the young child points at your mother-in-law and says 'cow'.

Although for some training procedures you are advised to either buy an '040 or leave your Amiga on overnight, the 20,000 con/sec speed quoted seemed to be quite fast (at least it was on my SSL A5000 equipped Amiga). The training speed of the network is all very well, but the time it takes to process an input is more important. With *NPro* this was very quick – almost instantaneous in fact.



```
diskette.
```

Above: The main Neural Pro screen, with (from top to bottom) error indicators, network control and layer displays.



```
diskette     diskette
plane        plane
cassette     cassette
house        house
apple        apple
bird         bird
book         book
number       number
letter       letter
computer     computer
happy        happy
```

Left: the images and text with which the network was trained.
On the right, the text output whenever the 'noisy' pictures were introduced.
Incredibly, the network correctly indentified them all!

DIFFERENT DATA

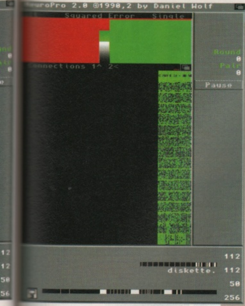
Because *NPro* runs on an Amiga and not a huge mainframe bristling with gigabytes of storage and RISC processors, the input and output data must be rather severely size limited. In practice this means that a maximum of 256 cells (ons or offs) can be used, which equates to 32 characters of text, or a single 8 by 8 or 16 by 16 monochrome graphic image. Certainly this isn't very large – for example, you are not going to be able to process a 16 colour interlaced digitised picture, but it is more than adequate for some fairly complicated experiments. A further data protocol involving pure on/off 'cells' of data is provided for more abstract data representation. The data must all be present in

RECOGNISING PATTERNS

It's easy for us to tell the difference between a letter 'A' and a drawing of an apple, but try to program your Amiga to do it and you'll soon run into horrendous problems.

Even if you were to constrict your drawings to an 8 by 8 grid, that still leaves 2 to the power of 64 different possible patterns. That works out at about 18.5e18 – 18.5 million million million! – different options so it would be virtually impossible to write a program to look for each one in turn.

Neural networks can recognise pictures very easily, once they have been trained to do so. Even better they don't take up much memory: a net to recognise 8 by 8 grids takes up 512K of RAM.



By clicking on the network control window, you can catch a glimpse of what is happening inside *NPro* – the network connections.

AmigaDOS files which you have prepared earlier, either with a text editor or a paint package such as *Deluxe Paint*. This does somewhat remove the element of immediate feedback, but certainly offers maximum flexibility. But what use is it?

This is, of course, the six million dollar question. The package itself says it will be 'a valuable tool in speech recognition and generation, language translation, radar and sonar signature systems, musical waveform generation, financial and credit rating systems, financial market pattern analysis, image recognition, and many other applications of intelligent pattern analysis and recognition.' This may be true – who am I to argue – but exactly the same claims may be made of a C compiler or, indeed, the Amiga computer itself.

The hard part, and it's sometimes impossibly hard, is describing the problem in terms that the neural network can understand – the supplied manual does not give much help in this respect. Is this a serious fault? Not really – after all, how many language compilers and assemblers come with tutorials to teach the user to program? (Answer: none) There are enough books available on the subject of Neural Networks and Artificial Intelligence to ensure you get full use from *NPro*. Networking is still a relatively new field, and any research you do will probably be among the first of its kind done on personal computers.

WHAT IS A NEURAL NET?

The human brain consists of many thousands of 'neurons' – these are highly complex cells that are known to be somehow involved with functions such as decision making and pattern recognition.

Their exact function is still not known, but even by 1941, Warren McCullough and Walter Pitts had constructed a mathematical model using simple neurons and their interconnections – the first nerual net. They discovered that all pure logic problems could be described by a neural network – as long as you knew what the net should look like. For many scientists, this was the proof needed to describe the human brain as nothing more than a highly complicated, although ultimately reproduceable, machine. It seemed that truly intelligent machines were no longer fiction, and only a matter of years away.

Unfortunately, the work of Marvin Minsky and Seymour Papert showed that such simple nets (sometimes referred to as perceptrons after their ability to recognise patterns) had severe limitations, and no matter how large or fast, would always fail under certain circumstances. This fact crippled research into neural networks practically overnight, for it seemed that nerual nets were a complete dead end and waste of time.

However, to the rescue came the networks developed by Stephen Grossberg and John Hopfield. These new nets were special in that they could be 'trained' to recognise inputs, rather than relying on pre-programming. A process called 'back-propagation' allowed the networks to re-organise themselves, altering connections and their thresholds, depending on how far their output differed from the desired target result.

Given enough training, even a relatively small network could recognise simple patterns with 100% accuracy. The amazing thing is the way in which the networks reacted to input that had never been seen before – other than responding with a 'don't know – never seen it before' answer, they still produced an output. Such a net trained to recognise a particular typeface would have a good attempt at recognising a sightly different font, too.

Of course, nothing is perfect. Once the patterns become large the networks grow in size and become prohibitively slow to process. Furthermore, a network trained to recognise, say different breeds of armidillo, will be useless at predicting Premier Division football results. The latest nets – Boltzman networks – add the concept of energy levels to prevent loops from occuring, and have recently appeared modelled in silicon.

It is fair to say that a network simulating a complete human brain is completely impossible – even on an 68040 based Amiga. Strangely enough, a CU Amiga Managing Editor's brain has been running successfully on a 48K Spectrum for several months now...

AREXX TO THE RESCUE

One very important *NPro* feature is the inclusion of an ARexx interface. This means the network program can run in the background to your main task, sending and receiving data almost invisibly. For example, say you had a program which needed to receive text from a noisy modem connection. The text could be passed directly into your ARexx script from a Comms program, processed by a suitably trained neural net and then passed on to a display program. Even corrupted input data such as 'holla frimk' would be displayed as 'hello frank'.

For those who still haven't got to grips with ARexx (shame on you), MegageM have provided a special command called JAH, which can achieve similar results from AmigaDOS scripts.

CONCLUSION

NPro might come across as nothing but an expensive toy, but it does have a lot of serious uses – if you can think of them. With suitable programming via the ARexx interface (or AmigaDOS scripts) you will be able to produce some remarkable results.

For this reason I would like to see some form of 'stand alone' network engine, that would run in the Amiga environment without a screen open. This stripped down version would be unable to be trained, rather it would process input data from its ARexx port and send out results.

I'd also like to see an improvement in the immediacy of supplying data to *NPro*. A small grid, which the user could quickly sketch input patterns with the mouse would be a perfect way to increase the software's use as an educational tool. Even the ability to send a single string via ARexx instead of a file would be nice.

While I'm making wish lists, I'd like some way of dealing with larger IFF files. The current limit of 16 by 16 is far too small for any recognisable digitised graphics. Obviously a full 320 by 256 screen would require a net so huge that you'd need a network of Amigas to deal with it, but there must be someway to expand the size. Even more freedom in providing images outside the special grid system would be an improvement. By the way, 16 by 16 is the perfect size to process text, and one of the *NPro* tutorials deals with the possibilities of an OCR (optical character recognition) system.

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XL3000

Hewlett Packard have released a 24-Bit printer that claims near photographic quality. Mat Broomfield put it through its paces.

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IN THE BEGINNING

Hewlett Packard (HP) were one of the first companies to produce an affordable colour paint jet printer. Since its release, however, the Paintjet has steadily seen its position of superiority eroded by the likes of the Xerox 4020 and, more recently, the Canon BJC 800. Now it seems that HP have been far from happy to rest on their laurels, for they have been quietly plotting a new range of colour printers, the pinnacle of which is the XL300.

24-BIT PRINTER

The XL300 claims to produce output which is nearly as good as a laser printer, and in glorious 24-bit colour. When you consider that dot matrix printers such as the Star and Citizen models have trouble producing even the 4096 colours that a standard Amiga is capable of, the prospect of a printer which can produce 16.8 million colours is very exciting indeed. The first thing that I noticed about the XL300 is its size, it's Big with a capital B! And heavy – *very* heavy! In actual fact, the printer measures 30x20x10 inches, or about half as big as a small refrigerator. At a hernia-inducing 45 pounds it weighs the equivalent of 22.5 bags of sugar.

The second thing that stood out was the manual. The XL300 has been designed to function almost exclusively in a Mac or PC environment, and the manual has been totally geared to these machines as have the drivers and additional software supplied with it.

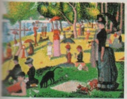
Unless you know your Linefeed from your lpi this is not a printer for you. Setting up the printer was fairly straight forward although the DIP switches took a while to figure out. As I've mentioned, it is an extremely cumbersome machine to move around, and you're going to need a serious amount of desk space to house it. Other than that it's simply a matter of connecting an ordinary parallel cable to the Amiga and the printer and switching the power on.

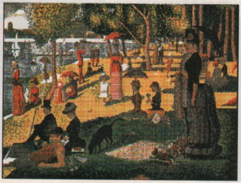
DRIVING TROUBLE

Unfortunately there are no specific Amiga printer drivers available for the XL300, so I was forced to use an old Paintjet driver which seemed to work well enough. Having said that I was not attempting to print anything in 24-bit, so I didn't tax the printer particularly hard. To the best of my knowledge there are no 24-bit Amiga drivers available yet so if you're hoping to output 24-bit images you'll have to write your own driver! GVP tell me that their imminent image processing program will include 24-bit drivers and may even include a specific one for the XL300. We'll just have to wait and see... Having connected the unit up and selected a suitable driver all that remained was to hit the on button.

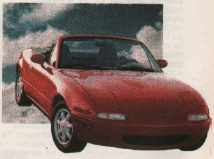
Er, up, up and away? Open sesame? Into the blue? Nope, you can forget all that switch on and go rubbish, this printer's far too up market(!) for that. This baby needs a good five to seven minutes of internal heating, clunking and banging before it will even consider actually printing anything.

Eventually the XL300 was initialised and ready to go so I thought that I'd give it a try with some *D-Paint* graphics. After what seemed like about two weeks (but was actually more like ten minutes) of waiting I was presented with my first piping hot A4 screen dump. Hmm, rather gloomy and not signifi-





Pictures with lots of bold and bright colours usually translate very well when printed. Compare the original screen (above) with the print-out.



The subject matter can make a great deal of difference to the final print out. Very detailed or digitised images tend to print the best as you can see from Hewlett Packard's 24-bit car print-out.

➢

XL300

cantly better than the old Paintjet. Then I realised my mistake – the XL300 can print on four types of paper: plain photocopier paper, special coated paper, glossy paper or transparencies. However, it uses different saturations of ink according to the paper it's printing on and you need to specify the type before you start. I hadn't, and did a plain print on glossy paper. One sheet of paper in the bin, one pound wasted.

Why a pound? Well the glossy paper is rather expensive: 90 pence a sheet to be precise. When you add that to the cost of the ink, you come up with just under one pound per full colour A4 page. Not cheap in anyone's books. Okay, ready for try number two. Glossy paper in, paper type specified, away we go. Ten minutes later, hmm, rather gloomy *and* skewed on the page. Ooops, wrong side of the paper. Try again and ta da! My first decent picture, and what a picture it was: colours solid and close to those on the screen, ink placement perfect with no smears or bleed. Very encouraging indeed.

GETTING IT TOGETHER

Thirty assorted prints later and I feel that I've gained complete mastery over the beast. It really is excellent, far and away the best colour printer I've ever seen running off an Amiga. On glossy paper and transparencies, the output is near photographic in quality. On HP plain coated paper, or ordinary photocopier paper, the output is quite dark and not overly impressive, although it's more than adequate for preliminary drafts, or non-professional use. The choice of image to be printed can make a big difference too: when printing digitised pictures or art that has a lot of detail, the results are truly superb. When it comes to printing simplistic images with a lot of white space in them, the results are not quite as spectacular.

Incidentally, despite the fact that the printer has two megs of RAM on-board (upgradable to 16 megs), almost every screen I printed had to be done in two halves. Having clicked Print from *D-Paint*, half of the image was sent to the printer, then a requester appeared on screen saying that there was printer trouble. If the printer is left to output the half screen that's already uploaded, clicking Retry prints the remaining half of the screen perfectly. I suspect that this is because all images are converted to its own internal 24-bit format before printing.

HOW DOES IT WORK?

At this point I should just mention the way that the printer works. It is primarily a bubble jet machine like the Canon BJ series and therefore it places the image on the paper by squirting little blobs of ink at the page. Where it differs from a conventional bubble jet is in the way that it uses a high temperature fixing process to dry and 'lock' the ink onto the paper. This stops the ink from smearing and even bleeding, so that the pixels of ink can be positioned with much higher accuracy than conventional bubble jets.

Although the XL300 only has a resolution of 300 DPI (equivalent to an average laser printer, but lower than the Canon BJ series), its printed output is much sharper than you would expect. To be honest its colour mixing is not that sophisticated and non-primary colours are still achieved by mixing primaries in a variety of dither patterns. The only reason it is able to offer such a high palette is the extreme accuracy of its ink positioning on the paper.

In case you're wondering, the XL300 does print ordinary text as well as graphics. It has a maximum print speed of two pages per minute – equivalent to a rate of 176 characters per second. When it comes to printing single pages of text the printer doesn't even come close to this speed because even once it's initialised, the printer has quite a lengthy job-start and form feed process to go through before it begins printing. Strangely enough, text printing is the XL300's greatest weakness.

The default font looks similar to that of the BJ-10e, but each character is surrounded by what appears to be a corona of fine ink dots, almost as if the ink splashed off the paper when it was printing. On the subject of text printing, the XL300 is compatible with the Laserjet 3 and will accept font cartridges designed for that printer. Furthermore, it's supplied with 13 scalable typefaces including Times, Univers and Zapf Dingbats. These ensure that no matter how large or small you print text, it will always appear at the best possible quality (ink splashes aside!). It also features PCL 5C, a page description language which gives incredible versatility. Unfortunately there are no Amiga programs which can directly access PCL 5C, so it's rather redundant.

CONCLUSION

The XL300 is a truly superb printer which seems to have been designed with professional creative users – marketing people, designers, that kind of thing – in mind. As a home machine, its £3000 price tag puts it well beyond the scope of most users, although perhaps a group of artistically minded people could buy one between them. There's no doubt that it produces the best Amiga prints I've ever seen, but the high cost of glossy paper makes it impractical for daily use. It's a pity that the machine has been geared so totally towards PC and Mac users because with suitable drivers, the XL300 is the answer to an Amiga artist's dreams. If you ever find yourself with a few thousand pounds knocking around, you could consider this, but remember, running the XL300 is a continual expense.

XL300

. . . at a glance

• 24-bit colour printer •Needs expensive paper for optimum results •Slow and noisy •Includes 13 scalable fonts *Uses PCL 5c page description languagae •Excellent printed results on suitable paper •Text printing a little dubious •Upgradable memory and fonts.

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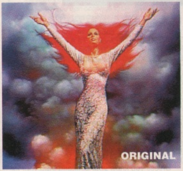
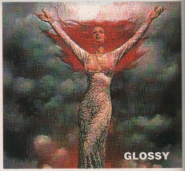
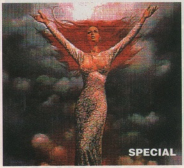
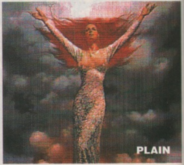




As you can see by these print-outs, there is a noticeable difference when printing on different types of paper. When using plain paper, the results are passable, but a little washed out and grainy looking. On HP's special paper, the printouts are fully detailed, but rather dark. At 88 pence per sheet, glossy paper gives superb results, and although you cannot tell from this picture, the mere fact that the paper is shiny makes it appear much more professional. Compare these against the original screen (top left).





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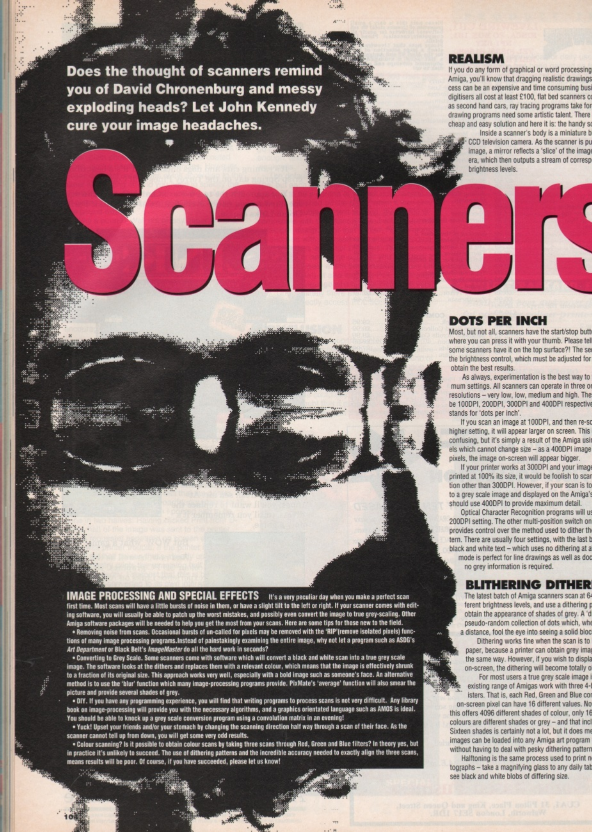


Scanners

Does the thought of scanners remind you of David Chronenburg and messy exploding heads? Let John Kennedy cure your image headaches.

REALISM

If you do any form of graphical or word processing work on the Amiga, you'll know that dragging realistic drawings into the process can be an expensive and time consuming business. Video digitisers all cost at least £100, flat bed scanners cost the same as second hand cars, ray tracing programs take forever and drawing programs need some artistic talent. There must be a cheap and easy solution and here it is: the handy scanner.

Inside a scanner's body is a miniature black and white CCD television camera. As the scanner is pulled over the image, a mirror reflects a 'slice' of the image into the camera, which then outputs a stream of corresponding brightness levels.

DOTS PER INCH

Most, but not all, scanners have the start/stop button on the side, where you can press it with your thumb. Please tell me why some scanners have it on the top surface?! The second knob is the brightness control, which must be adjusted for each image to obtain the best results.

As always, experimentation is the best way to find the optimum settings. All scanners can operate in three or four different resolutions – very low, low, medium and high. These turn out to be 100DPI, 200DPI, 300DPI and 400DPI respectively, where DPI stands for 'dots per inch'.

If you scan an image at 100DPI, and then re-scan it with a higher setting, it will appear larger on screen. This can be a bit confusing, but it's simply a result of the Amiga using display pixels which cannot change size – as a 400DPI image contains more pixels, the image on-screen will appear bigger.

If your printer works at 300DPI and your image is to be printed at 100% its size, it would be foolish to scan at a resolution other than 300DPI. However, if your scan is to be converted to a grey scale image and displayed on the Amiga's screen, you should use 400DPI to provide maximum detail.

Optical Character Recognition programs will use at least a 200DPI setting. The other multi-position switch on the scanner provides control over the method used to dither the output pattern. There are usually four settings, with the last being for pure black and white text – which uses no dithering at all. The 'text' mode is perfect for line drawings as well as documents, when no grey information is required.

BLITHERING DITHERING

The latest batch of Amiga scanners scan at 64 or more different brightness levels, and use a dithering process to obtain the appearance of shades of grey. A 'dither' is a pseudo-random collection of dots which, when viewed from a distance, fool the eye into seeing a solid block of grey.

Dithering works fine when the scan is to be output on paper, because a printer can obtain grey images in exactly the same way. However, if you wish to display your scans on-screen, the dithering will become totally obvious.

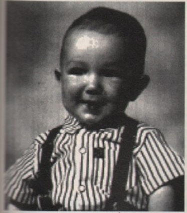
For most users a true grey scale image is required. The existing range of Amigas work with three 4-bit colour registers. That is, each Red, Green and Blue component of an on-screen pixel can have 16 different values. Now although this offers 4096 different shades of colour, only 16 of these colours are different shades or grey – and that includes black. Sixteen shades is certainly not a lot, but it does mean that your images can be loaded into any Amiga art program for tweaking, without having to deal with pesky dithering patterns.

Halftoning is the same process used to print newspaper photographs – take a magnifying glass to any daily tabloid and you'll see black and white blobs of differing size.

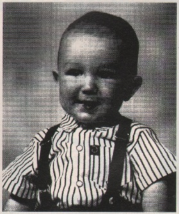
IMAGE PROCESSING AND SPECIAL EFFECTS

It's a very peculiar day when you make a perfect scan first time. Most scans will have a little bursts of noise in them, or have a slight tilt to the left or right. If your scanner comes with editing software, you will usually be able to patch up the worst mistakes, and possibly even convert the image to true grey-scaling. Other Amiga software packages will be needed to help you get the most from your scans. Here are some tips for those new to the field.

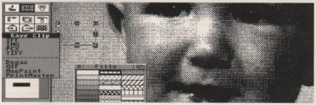
- Removing noise from scans. Occasional bursts of un-called for pixels may be removed with the 'RIP'(remove isolated pixels) functions of many image processing programs.Instead of painstakingly examining the entire image, why not let a program such as ASDG's *Art Department* or Black Belt's *ImageMaster* do all the hard work in seconds?
- Converting to Grey Scale. Some scanners come with software which will convert a black and white scan into a true grey scale image. The software looks at the dithers and replaces them with a relevant colour, which means that the image is effectively shrunk to a fraction of its original size. This approach works very well, especially with a bold image such as someone's face. An alternative method is to use the 'blur' function which many image-processing programs provide. PixMate's 'average' function will also smear the picture and provide several shades of grey.
- DIY. If you have any programming experience, you will find that writing programs to process scans is not very difficult. Any library book on image-processing will provide you with the necessary algorithms, and a graphics orientated language such as AMOS is ideal. You should be able to knock up a grey scale conversion program using a convolution matrix in an evening!
- Yuck! Upset your friends and/or your stomach by changing the scanning direction half way through a scan of their face. As the scanner cannot tell up from down, you will get some very odd results.
- Colour scanning? Is it possible to obtain colour scans by taking three scans through Red, Green and Blue filters? In theory yes, but in practice it's unlikely to succeed. The use of dithering patterns and the incredible accuracy needed to exactly align the three scans, means results will be poor. Of course, if you have succeeded, please let us know!



This is a greyscale image output from the Migraph *Touch Up* software from an original at 400dpi.



Using photo mode at 300dpi can produce some respectable results.



The *Touch Up* software included with the Naksha scanner is also bundled with the well-known *AlfaScan* and may be appearing with other hardware soon.

NAKSHA SCANNER

The Naksha is a good looking and sturdy unit. The body of the scanner seems to be a bit wider than is really necessary, which means it isn't quite as easy to hold as other scanners. Furthermore, the start/stop button is on the top. The arrangement means that it is quite easy to accidentally alter the brightness setting when scanning.

The interface which is needed to drive the Naksha is a small cartridge that connects to the 86-pin expansion port. It has no through port. At first I simply couldn't believe that anyone would attempt such a thing – if your hard-drive doesn't have a through port (and very few do), you are going to have problems. Apart from anything else, if you upgrade your Amiga to a A600, A2000, or to the fabled new models, you will need a new interface.The manual states that if you have any expansion RAM then it should be limited to an A501 in the trapdoor.

This means you can have a whole 1Mb on an A500 – just enough for anything other than a very small scan to cause a 'low memory' alert. Since this was totally unacceptable, I tried using an auto-configuring 2Mb 500RX Supra memory expansion. Thankfully this worked, permitting some sensibly sized scans, but if I had bought an official Commodore A590 hard drive and used it to expand my memory, I would have been stuck. A500Plus owners will have slightly more luck, as they can have 2Mb on board – although no reference is made to this in the manual. Since the manual constantly advises you to obtain a hard drive and have at least 2Mb of RAM, someone at Naksha should consider giving the interface a through port.

After the ordeal of connecting the scanner, I was suddenly faced with the scanning software, supplied to Naksha by Migraph Inc. Is it possible for a piece of software to be too good? *Touch-Up* certainly gets close, for it`s certainly a most comprehensive package.

It's definitely a paint program with a scanning option, rather than a scanning program with a paint options. At times it can easily out-perform *Deluxe Paint*, and importantly, it also creates some excellent grey scale images - which can be saved out in IFF or TIFF format for inclusion in most DTP packages.

Touch-Up is worth buying separately if you have any other make of scanner, just so you can load in images and process them properly. The images produced by the Naksha were excellent, even at 400DPI which has been known to cause random bursts of noise on other scanners.

For some reason there is no warning if you scan too fast – the image simply becomes squashed on-screen. I have to wonder if the high image quality is due to the expansion connecter being used instead of the parallel port. With the large number of brightness levels possible, it seems likely that the poor parallel port would be unable to cope. If you have a hardware set-up that can accommodate the Naksha interface, you should strongly consider this scanner.

NAKSHA

. . . at a glance

• A500/500Plus only • Migraph 'Touch-Up' software • 64 Brightness levels • Scanning resolutions: 200,300,400DPI•three photo modes, one text • uses expansion slot

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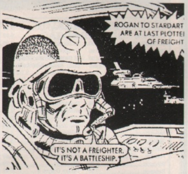
ROGAN TO STARDART ARE AT LAST PLOTTEI OF FREIGHT
IT'S NOT A FREIGHTER. IT'S A BATTLESHIP.

Text mode is ideal for scanning artwork, which doesn't use greyscales. Scanned on Pyramid scanner at 100dpi.

PYRAMID SCANNER

The first think I noticed about the Pyramid scanner was the sensible interface – it's a small box that connects to the printer port via a short cable. Your printer plugs into the interface box's through-port, and scanning or printing modes are selected with a toggle switch. Common sense at last! The Pyramid scanner seems slightly less solid than the Naksha, but offers an extra (100DPI) scanning resolution.

When you move the scanner too fast it goes 'bleep!'. The Pyramid Scan software supplied is basic to say the least, with no editing facilities available. If you wish to crop, rotate or re-draw the image you'll have to save it out and re-load it into a paint program such as *Deluxe Paint* – or *Touch-Up* if you are lucky enough to own it.

Running *Pyramid Scan* on Workbench 2 produced an inverted colour scheme. A realtime display of the scanned data is provided. In use, the Pyramid scanner's lower grey scale resolution is quite apparent, although the use of halftones gives quite respectable results especially when printed.

For some folks, the use of halftones might be preferable to dithers, but in my opinion, the results from scanning photographs were not as good as with the Naksha unit.

Overall, despite its low price and friendly user interface, the below par image quality of the Pyramid means that spending the extra cash may be worth it in the long run.

PYRAMID

. . . at a glance

• Pyramid Scan Software • Parallel interface • 32 Brightness levels • Scanning resolutions: 100, 200,300,400DPI • Three photo (halftone), one text mode

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A530 Turbo

Mat Broomfield takes the lid off what is touted to be the ultimate Amiga add-on.

The GVP A530 Turbo may look like just another hard disk interface, but the beige exterior conceals the power to turn an A500 into a high-powered workstation.

HARD ACT TO FOLLOW

Since its release nearly two years ago, the GVP Series 2 hard drive has proven itself to be the ultimate drive for A500 owners. Its combination of sleek looks, blistering speed, user-friendliness and all round upgradability have consistently won it top notch reviews in every Amiga publication. Now, a new drive has arrived, and frankly, it leaves the Series 2 for dead!

When the Series 2 was originally released, its documentation mentioned that a 68030 accelerator card could be added to it via its mini-slot (internal expansion port). After trying in vain to produce such an add-on, GVP set about designing a whole new drive in which to house the '030.

The result is the A530 Turbo, a masterpiece of engineering!

NEW KID IN TOWN

The unit looks much the same as the old Series 2, although the decals have now been switched for a snazzy embossed logo, and an extra LED has been added beside the disk light to show the status of the accelerator.

If you take a closer look, you'll notice that the Game Switch of the Series 2 has been replaced with a Turbo switch. On the Series 2, the Game Switch was used to make the drive 'invisible' to the Amiga's operating system, thereby ensuring absolute compatibility with any software that might object to the drive. The Turbo switch performs the same function on the A530, but because its 32-bit RAM and (optional) 68882 maths co-processor are integral parts of the drive they also become inactive when the drive isn't in Turbo mode. Any RAM that you have added to your Amiga internally will still be available, so trap-door and Gary chip expansions are both unaffected, as is any chip RAM. To be honest, I considered this is a little irritating at first, but I soon realised that there weren't any programs I could think of that conflict with the accelerator but require more than a megabyte of memory. In the great majority of cases, software that won't run with the accelerator is limited to games.

UNDER THE LID

If you open the A530 up (as you must do to fit additional RAM or a maths chip), you may notice a significant difference in its internal architecture. Even though GVP uses VLSI (Very Large Scale Integration) technology in their hardware anyway, everything has had to be greatly compressed to make room for the acceleration circuitry. Whereas the Series 2 had four SIMM slots for adding memory in one or four megabyte chunks, the A530 only has two. The maximum RAM capacity of the drive remains at eight megs, but a little flexibility has been lost. With the Series 2, you could add two or four megs of RAM using one meg SIMMs, or eight megabytes using two four meg SIMMS. Now you can only add two megabytes of RAM in one meg SIMMS or eight megabytes using four meg modules.

At first glance, this seems to be quite a bad thing, but in fact, it's a blessing in disguise. When the Series 2 was in its early days, four meg SIMMs were inordinately expensive, persuading many users to upgrade using the one meg chips. Unfortunately, to upgrade to a full eight megs you HAD to use four meg chips. If you subsequently decided to upgrade to eight megs after having bought any one meg SIMMs, you had to bin them, and buy entirely new chips.

Now, with four meg SIMMs costing as little as a £107, A530 users are virtually *compelled* to buy these in the first place. Furthermore, these aren't your bog standard 16-bit SIMMs we're talking about, oh no! These are 32-bit modules which work faster than the Amiga's own internal ROM chips!

It's ironic then that the drive comes supplied with a single one meg SIMM. Although it's a nice thought on GVP's behalf, I think that they should have either included a single four meg SIMM or not included any rather than lead people in the wrong direction.

Behind the SIMM slots sits the half-height drive, and beneath that lurks the accelerator card. The Accelerator is a 68EC030 which means that you can plug in an additional maths co-processor if you require it. On its own the accelerator runs at 40mhz – which in purely mathematical terms makes it about 5.17 times faster than a standard A500, and about 1.6 times faster than an A3000. However, the average speed at which your computer will run is determined by a range of factors from the application being used to the amount of RAM available. When I ran Sys Info it said that the accelerator was running 11.17 times faster than an A500 and 1.32 times faster than a 25MHz A3000. To get a more realistic impression of how this affects different software, refer to the speed comparison chart at the end of this review.

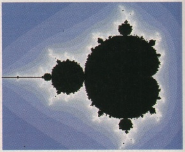
If you're using a lot of maths intensive software such as ray tracers, vector or fractal generators, etc, you may find it useful to buy the additional 68882 maths co-processor (co-pro) which plugs into the accelerator board.

To fit the maths co-pro, the actual hard drive needs to be unscrewed. This is a simple enough operation, but extra care should be taken at this stage as it's potentially very easy to damage either the drive or the chip. Although the chip has more legs than a millipede orgy it slides quite easily into its slot at the back of the accelerator.

At the right of the drive there is a multi-pin male expansion bus which GVP have dubbed the 'mini-slot'. This unassuming terminal is actually designed so that you can add further peripherals internally. At present the only compatible peripheral is GVP's own 286 PC emulator.

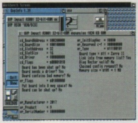
QUICK START

Once additional memory, peripherals and co-processors have been added (a task which won't take more than a minute or so); screw the lid back on and the drive is ready to connect to the Amiga. Of course, if



Rendering a Mandelbrot is nearly 10 times faster with the GVP Turbo drive, but the addition of a maths co-processor makes only an extra 5% difference.

The 68030 will not speed up blitter operations, hence only a six-fold speed increase when using Vista in HAM mode.



```
Workbench Screen
GvpInfo 1.39
GVP Impact A3001 32-bit-RAM ex
GVP A530 '030/SCSI
1: GVP Impact A3001 32-bit-RAM expansion 1024 KB RAM
cd_BoardAddress = $00200000    er_InitDiagVec  = $0000
cd_BoardSize    = $00100000    er_Reserved c-f = $00000000
cd_SlotAddress  = 32           er_Type         = %11100101
cd_SlotSize     = 16             Board type = %11 = Zorro II
cd_Driver       = $00000000      Link into free memory list? Yes
cd_Flags        = %00001010      Diag Vector valid? No
 Board has been shut up? No      Chained config request? No
 Board needs a driver? Yes       Memory size = %101 = 1 MB
 Board contains bad memory? No
er_Flags        = %01000000
 Put board into 8 meg space? No
 Board can be shut up? No

er_Manufacturer = 2017
er_Product      = 9
er_SerialNumber = $00000000
```

The software provided with the drive should give you every test and tool you could possibly need.

you don't want to add anything internally, the drive's ready to go as soon as you take it out of its box.

Like the Series 2, the A530 plugs into the expansion port at the left-hand side of the computer. Because of strict American regulations governing electrical emissions, the connection between the drive and the computer has to be shielded with a metal plate. On the Series 2, this was provided by way of a separate chunk of steel that had to be clipped onto the Amiga before connecting the drive. On some Amigas, space was so limited that users inadvertently plugged the drive in so that it was touching the main circuit board, and consequently blew their computers up. The A530 avoids this problem by incorporating the shielding directly into the drive, so connecting drive to computer is merely a matter of pushing the two connectors together.

When everything's ready to go you may notice another new feature regarding the drive's power supply: it no longer includes an on/off switch. This is because the drive automatically switches itself on when the Amiga is turned on. Having turned the computer on, the drive will automatically configure itself according to which version of Kickstart – 1.3 or 2.0 – you are using. 1.2 owners are out of luck because the A530 will definitely not work with your machine... but isn't it about time you upgraded your Amiga anyway?

USER-FRIENDLY

After a brief moment a screen appears asking you to confirm which version Amiga you are using. When you have answered the drive proceeds to install an appropriate Workbench and numerous GVP utilities on the drive. This auto-installation program really is exceptionally nice because it means that even beginners can start using and filling their drive within minutes of switching it on.

When the installation is complete the Workbench screen will appear. From there on, what you do is up to you. The accelerator is turned on by default, as is the maths co-pro (if you've fitted one).

A quick wander around the GVP Workbench will reveal that in addition to the usual utilities, there's also a separate drawer labelled 'GVP'. This drawer contains a host of utilities to help you get the very most from your new drive. The most immediately useful of these utilities is called GVPinfo, and as its name suggests, it provides comprehensive information about your current set-up, including processors, RAM, accelerators etc.

At its simplest the program can be used to check that everything is in place and working correctly, but it also goes far beyond that by giving comprehensive information for the most demanding of users. Every conceivable scrap of information is available, ranging from the location of the boards, to address modes and the way that memory is handled.

GVPCPUControl is a program which simply lets you turn off the accelerator and return control to the Amiga's 68000 processor. When you select this program the Amiga will be reset and when the drive re-boots you'll be in 68000 mode. This is simply a software version of the Turbo switch, and performs exactly the same function.

ROM CACHE

If you launch the CPU control program from CLI or include it as part of your startup-sequence, it also performs an invaluable additional function: ROM caching. Because the drive uses 32-bit RAM, as opposed to the much slower 16-bit variety found in your Amiga, it's much faster to access system ROM routines stored in the A530's memory than it is to read them from the Amiga's internal chips. The system ROMs influence virtually every feature of the Amiga's operation, so using ROM caching can make a major difference. When this feature is activated, all of the Amiga's system ROMs are copied into 32-bit RAM and are subsequently accessed from there. Be warned however you will need at least two megs of RAM to use this feature.

For real power users the SCSI control program is likely to come in handy. This allows you to customise the ID numbers and configurations of any units connected to the SCSI port at the back of the drive. This is particularly useful because it lets you add such things as tape streamers, optical drives or even another hard drive. Up to six extra SCSI devices can be attached to the A530.

The remaining programs, FastPrep and ExpertPrep, let you reformat or repartition the drive if you require a set-up other than the default. To be honest, you're unlikely to need FastPrep as it performs a very basic installation, but experienced users may appreciate ExpertPrep which lets them configure the drive with extreme precision, setting such options as the high and low cylinder numbers, the type of file system to be used on each, and so on.

As a matter of interest, the A530 also includes the latest version of FastROM which unbelievably speeds drive access up by as much as 33%. Considering the fact that the original Series 2 was lightning fast, this extra speed is like adding a turbo to a Formula One car.

CONCLUSION

The A530 is definitely the most exciting Amiga peripheral I have ever had the pleasure of reviewing. It transforms a humble A500 into a high powered work station that's superior in some ways to the revered Amiga 3000s. The manuals that come with the drive are all but redundant due to its user-friendliness, but should you care to read them, you'll find them to be both comprehensive and easy to digest.

Initially it looked like the drive might score an unheard-of 100% but there are a few extremely minor shortfalls: The help feature in GVPinfo is not implemented, the fan is a tad noisy, the restrictive memory upgrade path is annoying and the fact that the drive can't be turned off whilst leaving the computer on is a hindrance.

I liked the A530 so much that I bought one (come back Victor Kayyam) the day it was released. Now a fortnight later, I'm happier with it than ever. I can give no higher recommendation...

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A530 TURBO

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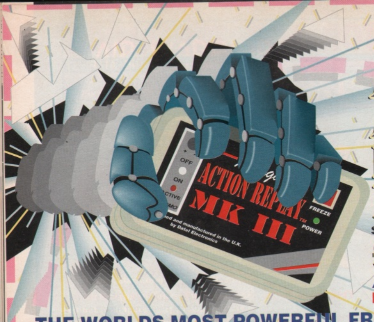
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miniOffice

David Ward examines the fiscal prospects for a pound saving business package.

EVERYWHERE AT LAST

There have been versions of *miniOffice* for practically every popular home computer since the Sinclair Spectrum. The Amiga can now be added to that list. It is published by Europress software, the company that brought you *AMOS*.

Successful computer based entrepreneurs require at least three programs to maintain their businesses. A word processor, for threatening letters; a spreadsheet for the accounts that the Revenue are not to see; and a database to hold the low-down on clients.

miniOffice gives you all this and a Graphics module for colourful business presentations, plus a disk utility program, for moving files and data around. Unexpected, yet in retrospect rather obvious, is that the programs in this package are written in AMOS. And they go to show what a powerful language it is. The package comes on four disks, each program being accessed from a Boot disk menu screen. By clicking on the relevant icon you are then prompted to insert the appropriate disk.

The menu program is still necessary even if you are running from hard disk, as you have to tell *miniOffice* where to look for different things. This is done in the set-up for each module where you define paths, printer output, and other preferences. Several modules also have their own configuration files.

Data interchange between modules is also a prime requisite for an integrated package, and *miniOffice* does not lack this important facility. A feature usually associated with databases is also to be found incorporated into the other Modules. This is a video recorder style set of buttons. They are used to move forwards and backwards through the records, documents, and accounts.

WORDS

The Wordprocessor module is about as fully featured as you can get, and compares very favourably to stand alone packages of an equivalent price. Although it uses its own peculiar format to save and load text files, there is an option to load ASCII text, whether Amiga or MS DOS. ASCII text can only be saved in MS DOS format.

ASCII files can be re-formatted to fit the default page layout, but this cannot be done if your margin stops have been brought closer together. Manual re-formatting is then necessary. Graphics can be included in the document, up to five of which can be operated on at any time. Individual words can be marked for rapid editing, and there is a comprehensive Search/Replace function.

Printer control codes can be embedded into the document if you want your printer to perform special functions not handled by the Wordprocessor, such as super/subscript. Italic, bold, and underline styles are available, and such text appears on screen correctly.

Practically every command has a keyboard short-cut. This will save the prolific from taking their pinkies off the keyboard and handling the mouse. Screen update is reasonable for the average four fingered typist, but if you use any more than that then you will experience a delay as the screen catches up.

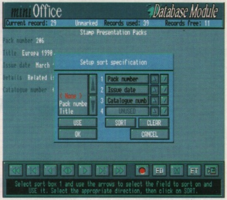
Frequently used words and phrases can be assigned to the function keys, so that 'Dear Sir' and 'Yours sincerely'and 'Where is your copy Jolyon?' may be added to a document with fewer keystrokes.

THE URGE TO MERGE

If you are sending the same letter to different people you can set up the document to take name and address data from the database. This is known as mail merging. The names and addresses are read from a separate file and inserted at the relevant parts of the text as it is printed.

Should your printer run into problems during printing, then the dreaded 'Printer trouble' requester pops up on the Workbench screen. You cannot see this unless you flip screens as no requester appears on the Wordprocessor's page.

The file requester was a little quirky in that the drag bar for scrolling the filenames sometimes refused to work. Also, you are limited to device names df0:, df1:, ram:, and Sys: as easily clicked directory buttons. This is common to the file requesters of each Module.



Current record: 29 Unmarked Records used: 39 Records free: 11

Stamp Presentation Packs

Pack number 206

Title Europa 1990

Issue date March

Details Related i

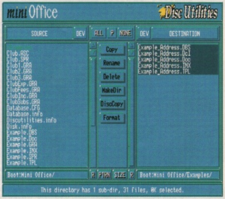
Catalogue number

(None)
Pack numbe
Title

1 Pack number
2 Issue date
3 Catalogue numb
4 UNUSED

Select sort box 1 and use the arrows to select the field to sort on and USE it. Select the appropriate direction, then click on SORT.

Fields can be sorted high to low, or vice versa, separately or combined. They are chosen from the scrolling menu.



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Club1.GRA
Club2.GRA
Club3.GRA
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ClubSubs.GRA
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Database.info
Discutilities.info
Disk.info
Example.DBS
Example.Doc
Example.GRA
Example.INX
Example.SPR
Example.TPL

Example_Address.DBS
Example_Address.Dcl
Example_Address.Doc
Example_Address.INX
Example_Address.TPL

Boot:Mini Office/

Boot:Mini Office/Examples/

This directory has 1 sub-dir, 31 files, 0K selected.

Simple *SID* – Although the disk utility program appears limited in its capabilities, there is powerful pattern matching available.

BARS AND PIES

By far the gem of the package is the Graphics Module. Here the data from the Spreadsheet, or the Database, can be displayed in an easy to see manner. Trends can be quickly spotted from a graph, than from masses of figures. There are two basic types of graph, line and bar, and the module has variations on these to give 14 to choose from.

There are also two types of pie chart, 2D or 3D, with options to show positive or negative data only. Segments of the chart can be exploded to highlight particular areas. Legends can be added in a variety of colours and styles quickly and simply. There is also a facility to load in an IFF picture as a background to any chart.

The y axis of a graph can be manually or automatically defined. Manual control gives you the chance to create graphs that display a range with negative to positive y values. The results can be printed out, or saved to disk as an IFF file. These can then be loaded into *DeluxePaint* for further refinement.

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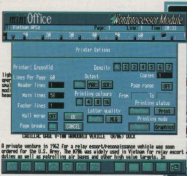
miniOffice

The odd characters that your Amiga has hidden away in its keyboard, like the Yen equivalent of the pound sign, can be put into your document by selecting them from a scrolling bar that appears at the bottom of the screen – very handy if you don't have a very good memory for triple key combinations.

There is limited spell checking available from a mixed English/American dictionary. I say limited because the word 'in' does not appear. The English 'aluminium' is marked as an error and the suggested replacement is the American 'aluminum'. Yet 'color' is not accepted, but 'through' and 'thru' are.

If there is no suggestion for a badly spelt word from the dictionary file, then you cannot edit it yourself during spell-checking. You have to come back to it later, which is a severe limitation.



1: Vietnam APCs Page: 1 Line: 1 Time: 20:33

Printer: EpsonXld
Lines Per Page 60
Header lines 1
Main lines 58
Footer lines 1
Mail merge OFF
Copies 1
Page range OFF
From To

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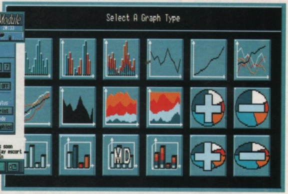
A private venture in 1962 for a relay escort/reconaissance vehicle was soon ordered for the U.S. Army. The M706 was widely used in Vietnam for relay escort duties as well as patrolling air bases and other high value targets. In

3D buttons abound and the printer options panel is no exception.



Graphs can be combined with IFFs to impress friends and relatives or angry shareholders.

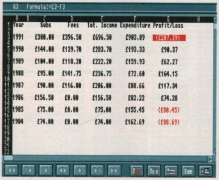
BASES LOADED

The Database module saves and loads its data in two separate files, a template and the database data itself. Before a new database can be constructed, a template has to be defined. Here the areas where the data is to appear, or fields, are arranged on screen, given a size, and whether they are text, numerals, currency, and so on.

A special feature of the database are the fields for formulae. These allow you to define fields that calculate values from numeric data entered in other parts of the database.

This is the basis of a stock control system, so this database can be used for more than just an address and telephone directory. Such data can be exported to the other modules.

If you have material from another database program, in ASCII format, then it is possible to load it into the module. A custom template must first be constructed, and any of the original's template data has to be edited out. The layout of the template can be determined by examining the file with the Wordprocessor. The editing can be done here too.



G3 Formula:=E3-F3

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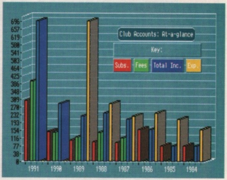
Negative values can be displayed in brackets following accountancy practice, and in red for your own amusement.



Colourful 3D graphs are what today's bank managers want to see. Impress them with *miniOffice*'s Graphics mode.

SPREADING IT ABOUT

Spreadsheets are very powerful tools in the right hands, and, being left-handed myself, I was unable to test out some of its more complex formulae. This is not to say it is not simple to use, it is, but the module has features that would satisfy the Chief Accountant of the Abbey National, as well as the home businessman.

A spreadsheet consists of a gridwork of cells, in which text (for titles), numeric data, and formulae are entered. Each cell is located on the grid by a row number and column letter, so that the top left most cell is A1, the one below is A2, and the one to the right of that is B2. To make life easier when building up a large spreadsheet, it is possible to cut and paste rows and columns to other places. This saves a lot of typing. If you make a mistake then there is an undo function, and also the chance to insert extras rows or columns if you've left one out.

miniOffice
EXIT
Database
Wordprocessor
Graphics
Spreadsheet

All in all, miniOffice represents tremendous value for money.

There is a Search/Replace facility, but there is a limit to which characters you can enter. For instance, say you had a column of formulae which you mistakenly entered as =Ax*Bx, where x is the row number. You cannot replace the * by using the Search/Replace, it will not accept the * sign. The + is allowed, but any formula so changed becomes a title.

The manual supplied with the package is over 200 pages. It is well illustrated and easy to follow, with each module explained by means of a tutorial and ready-made examples, plus a reference section. Why do they insist that a disk is a disc? I felt that the spreadsheet could have done with a little more explanation with regard to the formulae, but overall the manual is well thought out and conveys its concepts efficiently.

MINIOFFICE

. . . at a glance

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Rocgen Plus

The RocGen Plus, probably the best value genlock available for the Amiga.

Stephen McGill synchronises himself with the best budget genlock money can buy.

AMIGA POWER

One of the most useful peripherals which demonstrates without question the power and flexibility of the Amiga has to be the genlock.

By now, most Amiga users will know what a genlock is – a device to allow the synchronisation of a video source with Amiga generated graphics. This enables you to do tasks such as basic titling, captioning, etc. Adventurous interactive graphic effects can also be realised when more hands-on experience is gained.

Until recently, budget genlocks have only offered the simplest overlaying ('keying') technique to the budding DTV'er. That is to say they accept composite input into the Amiga, display video over the default background colour (colour 0) and then provide composite output of the mixed video and computer graphics. The Rocgen Plus allows more flexibility than the basic budget set up.

CONNECTIONS

Extra features start with the powering of the device. It draws power from the Amiga itself or alternatively can be powered by an external 12 Volt transformer. This is particularly handy if you've got a stack of peripherals attached to an already overstretched Amiga and power supply.

The genlock is housed in an attractively styled beige metal box, let's say colour coordinated, and sports a generous length of sturdy cable enabling it to be situated wherever is most convenient – probably on top of the Amiga itself. The lead puts an end to ZX81 style 'kludges' hanging from the back of the computer waiting to explode if the set up gets inadvertently moved.

The front of the genlock houses two small LEDs. One informs you that the device has powered up, the other lets you know that a live video source is connected. To the right of the LED indicators are two rotary knobs, labelled 'Amiga' and 'Video' respectively. These are for dissolve effects. A lot of fun can be had from playing about with the different combinations of settings. To enable you to understand more fully what they do, here is a summary of the four extremes.

- 'Video' at 'Max' and 'Amiga' at 'Max' displays Amiga graphics overlaid onto video source – the standard fare of genlocking.
- 'Video' at 'Min' and 'Amiga' at 'Min' displays Amiga graphics in outline and fills with video source. Known as 'inverse' effect or 'keyholing', this mode is useful for binocular/sniper's sight type of special effects.
- 'Video' at 'Max' and 'Amiga' at 'Min' displays video source only.
- Last but not least of the combinations is 'Video' at 'Min' and 'Amiga' at 'Max'. This combination outputs Amiga graphics. Title screens and the like can be recorded to video tape using this setting.

Roctec Rockey

The Rockey unit is the world's most affordable colour separation overlay system (but you do need a genlock as well).

You'll believe a man can fly with Roctec's revolutionary video effects unit. Chris Jenkins turns the key...

CHROMAKEYING

Whether you spend £100 on the Alter Image genlock, or £780 on the Hama 280 reviewed in the last issue, you'll see that every genlock will do more or less the same thing – synchronise the video output of your Amiga and a video source, so that Amiga graphics can be superimposed over video.

But what no affordable video peripheral could do until now is the opposite – to superimpose a video signal over a computer graphic (or another video signal).

Genlocks work by ignoring the background colour of the Amiga's video output, and superimposing the foreground graphics onto the video signal, synchronising the scanning rates of the images so that the result is steady.

In contrast, Roctec's RocKey is a colour splitter which can be used as a video 'keying' device. Used with a genlock, RocKey can produce the sort of effect which makes Superman appear to be soaring over the skyscrapers of New York, John Kettley appear on a computerised weather map, or a miniaturised Bill Oddie appear to clamber over gigantic plants.

CU AMIGA TOP RATED

Colour Separation Overlay is the name of the game – Chromakey if you want to be informal – and the result is that your Amiga can now become the centre of a video production studio of awesome power.

SETTING UP

A complete system using the RocKey unit, a genlock, various video sources and monitors is a bit complicated – the amount of wiring and number of different types of plug required is frightening. To make matters worse, the brief manual doesn't explain the function of three of the sockets, leaving you to figure it out from the diagrams and troubleshooting sections. Fortunately, basic operation is fairly straightforward.

The RocKey is a metal-cased unit about the size of a paperback book, finished in Amiga beige. There's an external power supply, and a trailing lead which connects to the Amiga's RGB port.

An RGB through socket connects to your genlock – no doubt Roctec would recommend their RocGen or RocGen Plus, but I achieved acceptable results with an Alter Image genlock. The genlock's video output is connected to your monitor.

On the back of the RocKey are five phono sockets. Video In accepts the signal from your video source – VCR or camcorder – and Video through connects to the video input on your genlock. That's the basic set-up – on to more complex things later.

On the front are a power LED, four soft-touch control buttons, and three knobs – one each for the Red, Green and Blue elements of the video signal. Each knob has an on/off button with an LED.

· Let's assume that your video source is a camcorder pointed at an object which stands in front of a blue background. Your Amiga is displaying a background graphic generated using an art package. Press the Chroma button on

RECORDING BOTHER

The first criticism of the Rocgen Plus starts on the note of recording Amiga graphics only. According to the manual, the Rocgen Plus generates its own internal timing pulses if an external video source is not connected. The plus point of this should be that you don't need a video source when recording only Amiga graphics to tape. Unfortunately, this seems to be only partly true. Interlacing presents problems when it comes to text, especially smaller text, which loses detail making it unreadable. Attaching a video source extinguishes the problem.

Pausing the video source while genlocking is not recommended either – the RGB and composite displays go crazy through loss of sync. The faint hearted may even think that their equipment has given up the ghost.

Sync problems aside, another of the several useful features distinguishing the Plus from its lesser budget brethren is the inclusion of an RGB Pass-thru port. This lets you monitor computer graphics and genlocked graphics separately. Very handy if you own two monitors, one of which should accept composite input. Those of you owning a 1084 or a CM8833 can now add another reason to the list why these monitors are such good value – they can do the job of two monitors in certain circumstances.

All inputs and outputs are of the phono socket variety. A shame really, considering that BNCs are preferable due to their higher quality output and sturdier construction. On the other hand most domestic VCRs and Camcorders are only equipped with phono sockets too.

THROUGH AND THRU

Enough of the petty gripes though. As well as the standard offering of composite video in and composite video out, the Rocgen Plus boasts a video through port. This encourages monitoring of the quality of the video source signal. It is worth mentioning that without a good quality video source, genlocked graphics won't be up to scratch and you may end up blaming the genlock itself for the poor results.

There is one more input on this genlock that you won't find on other budget models: a Key-In port. This is potentially the most interesting aspect of the whole device. Intended for use with Roctec's RocKey, it opens up the world of chroma-keying at an affordable price.

The unit comes supplied with an adequate ten page manual and a demo disk. The demo is hardly worth mentioning, consisting of some colour bars, a mouse movable crosshair and a utility to write a video script from a choice of colours and fonts.

GIMME AN S

The unfortunate aspect of this genlock is the lack of provision for an S-connector – an input to enable the connection of Hi-band video equipment. In this price range though, there's not much room for complaint. If you do own Hi-band gear don't despair, you can still use the Plus. It just means that you will have to use the reduced resolution of composite video, which can still reach 330 lines.

At this point it is worth mentioning a few problems that may be encountered with the Rocgen Plus in its present incarnation. The device was designed with the Amiga 500 Plus in mind. Those with older Amigas may find a narrow strip of graphic appearing on the right hand side of their genlocked graphics, even when using maximum overscan. Correction of this involves opening up the unit and adjusting the R5 variable resistor. Roctec plan to correct this in the future.

Care also has to be taken on the choice of colours for foreground and background (colour 0) graphics. If colour 0 is in direct contrast to a foreground colour such as red and blue, some disturbing fringing can occur.

CONCLUSION

This genlock is a joy to use. Although its aspirations do not break beyond domestic use (forget industrial or broadcast work), it still performs well. Comparing it directly with the Rendale 8802 makes the Rendale look decidedly dated and unfriendly. Those DTV'ers with a spark of creativity, imagination and curiosity will find that the Rocgen Plus is a Pandora's box waiting to be opened. ⊕

ROCGEN PLUS

. . . at a glance

• Key-in port • composite input only • Video through port • RGB through port • cabled to Amiga rather than plugged in • uses phono connectors •

Address:
Silica, 1-4 The Mews, Hatherly Road, Sidcup, Kent DA14 4DX.
Tel 081 309 1111.

SILICA £119.99

Unit is excellent for normal domestic use...

EASE OF USE	88%
VALUE FOR MONEY	78%
EFFECTIVENESS	70%
FLEXIBILITY	88%
INNOVATION	85%
OVERALL	**82%**

---

the front of the RocKey, press the Blue On button, turn the Blue knob and the blue background from the video signal disappears, leaving the video object standing against the Amiga's background graphics.

Activating the Red and Green parameters and adjusting their knobs allows you to sharpen the chromakey effect, or to choose a different background colour to key out. For best results the Amiga's colour zero should be close to the colour which is being 'keyed'.

MORE TRICKS

That isn't the end to the RocKey's abilities; you can also create 'Luma keying' effects. This method eliminates portions of the video image according to their brightness rather than their colour – ideal if, for instance, you want to replace a bright blue-and-white sky with a computer-generated post-apocalyptic nightmare.

If you want to superimpose one video image over another, you use the Key In and Key Out sockets for the second signal – not that you would know this from reading the manual.

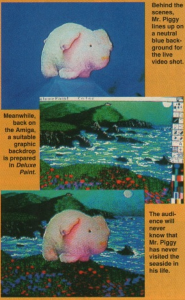
By combining different RGB settings and effects parameters, you can create all sorts of wacky video effects – normal overlay of computer graphics over video, 'graphic sandwich' where the computer image appears between two layers of video, 'key sandwich' where the keying image appears between computer graphics and the other video signal, graphic windows where the video image shows through holes in the computer graphic, key windows where the graphics show through a hole in the video which is the shape of the key signal – the combinations are almost endless.

Another possibility is using the RocKey with a mono digitiser to frame-grab colour video images. Press the Splitter button on the front, and the three components of the video signal will be routed in turn out of the Splitter socket on the back. The Splitter button's LED cycles through red, green and orange to indicate which colour component is being passed through – the LED can't produce a blue colour!

RocKey unfortunately can't cope with the higher resolution S-VHS or Hi8 signals. This means that it's unlikely to be of use in semi-pro or professional studios, but let's hope a high-band version is on the way.

CONCLUSION

Apart from the poor manual, RocKey is an amazing device which should revolutionise amateur video-making. Since the only competition comes from G2 Systems' Mirage, which costs a cool £1000, there's nothing to stop RocKey from conquering the Amiga video world. Absolutely amazing value for money. ⊕


Behind the scenes, Mr. Piggy lines up on a neutral blue background for the live video shot.

Meanwhile, back on the Amiga, a suitable graphic backdrop is prepared in *Deluxe Paint.*

The audience will never know that Mr. Piggy has never visited the seaside in his life.

ROCTEC ROCKEY

. . . at a glance

• Video colour separation device • Compatible with any Amiga • Compatible with any low-band video equipment • Amiga-compatible genlock required • Performs colour keying, Luma keying, colour splitting • Amiga RGB input and 'thru • Video in and 'thru • Key in and out • Splitter out • R, G and B level controls • Chroma, Inverse, Splitter and Effect controls

Address:
The RocKey is available from First Computer Centre, Unit 8, Armley Park Court, Cecil Street, Leeds LS12 2AE Tel. 0532 319444

FIRST COMPUTER £269.99

A unique video chromakey unit for use with a genlock

EASE OF USE	76%
VALUE FOR MONEY	79%
EFFECTIVENESS	90%
FLEXIBILITY	90%
INNOVATION	95%
OVERALL	**91%**

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AMIGA POWER

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"Addictive & enjoyable battle simulation."
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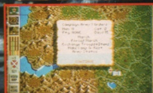
Vikings Fields of Conquest is a strategy simulation for up to six human or computer opponents. Each player assumes the role of a Lord in control of a kingdom with up to twenty armies to command in an attempt to become sole ruler and King of medieval England. Vikings Fields of Conquest has taken over two years to produce, is stunningly presented in 64 colour mode on the Amiga and contains all the elements of an in depth gameplay together with state of the art presentation, a must for strategic role players.

Kingdoms of England II



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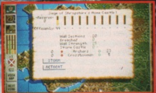

Siege of Shropshire's Home Castle!
-Reserve-
0
Efficiency: 99
Wall Sections 20
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Wall Strength 25
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0 Archers 0 23
0 Crossbowmen 0 5
STORM
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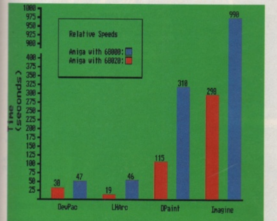
SSL A5000

It might not be the newest accelerator around, but it's definitely the cheapest. John Kennedy discovers that once you've used it, you can't do without it. (But he still has to give it back.)



The graph shows how much the A5000 speeds up a standard Amiga. The Devpac test involved assembling a 16000 line source file and the *DPaint* test consisted of rotating a HAM screen by 30 degrees. The Imagine test was a one frame render, and the LHArc a typical hard disk house-keeping task.

RETRO

The August 1988 issue of a certain Amiga magazine, the name of which escapes me at the moment, ran a review of the latest product from an American hardware company called CSA. The product was an accelerator card for the Amiga 2000, and it featured a 14.4MHz Motorola 68020 processor *and* a 68881 maths co-processor. This previously unthought of monster of a card came with 2Mb of RAM and cost a whopping £2000 (£5000 if you wanted 8Mb of RAM). The reviewer immediately went into 'rave' mode (thus pre-empting the current dance trend), and started likening it to a 200mph Ford Escort. But times change.

In these enlightened days Ford Cosworths do indeed do 200mph and raving is common, but generally it takes much more than an 020 card to make us jaded Amiga-people to reach for the superlatives. But before you turn the page, read this: the *A5000* from SSL is more reliable than that original card, a bit faster, more flexible – and best of all costs £250.

SPEED UP

Accelerator cards are much sought after by Amiga users for many different reasons. Any exposure to image rendering programs is an immediate cause, but even the latest in 3D games (for example, *Formula One Grand Prix*) can benefit from a turbo injection. Basically you cannot have too much speed, and perhaps even before a hard drive, the accelerator card is the peripheral to get. Well, they should be, but the prices of accelerator cards have always been just out of the reach of most folk, especially owners of A500/500Pluses whose machines lack the processor slot of A2000/1500s.

'Why oh why oh why can't I afford a faster computer?' is the question asked by nearly every Amiga owner, and at last the answer is simple: you probably can.

OH-20, OH-30, OH BOY

All pre-3000 Amigas (pre-2500 if you're reading this Stateside) come with a Motorola 68000 CPU as standard. As I'm sure you're well aware by now, this chip is a little temporally disadvantaged (old) and has been updated several times into the 68020, the 68030 and even the 68040. All these chips have major advantages over the 68000, not the least of which is that they are true 32-bit processors. Without getting bogged down in technical details, or to put it another way, without me reaching up to my bookshelf and getting paid for re-writing a text book, this means that the 68020/30/40 CPUs can access memory a lot faster than the 68000.

Faster memory access, combined with the internal caches and faster instruction execution rates, all make for faster programs. In fact, clocking in at 5.1 MIPS (Million Instructions Per Second), the *A5000* can be said to run more than five times as fast as an average Amiga. Now before you start calculating speed-up times based on this information, you must bear in mind that the custom chips on which the Amiga relies so heavily are still 16-bit chips, tootling along at 7MHz or so. Thus, any programs which rely heavily on them – such as games, paint programs, etc – will not automatically be sped up five times.

It's not nice, but this is the way of the Amiga world. However, if your program depends a lot on pure number-crunching, the speed-up can be exhilarating. A ray tracing program is a perfect example – as you can see from the graph, an image which took five minutes on an *A5000* equipped Amiga took sixteen and a half on a vanilla system. That's a speed-up of over 300%! By the way, the tests in the graph are not meant to be extensive – they merely indicate the typical reduction in time gained by me in everyday use.

By far the best improvement was with *Imagine2*, which like most rendering programs is supplied with a version specially written for 68020/30/40 systems. Overnight renders can now reach the heady limits of fifty frames!

INSTALLATION

Prior to all the speed benefits, you'll have to install the card. Fitting is the usual 'I wish this was someone else's Amiga' type of situation, but rarely as difficult as it first appears. The 68000 is prised from your motherboard with a screw-driver/biro/dinner knife and inserted into the empty socket on the A5000 card. One further heart-stoppingly firm but gentle push later, and your Amiga has a new brain. It all takes about 15 minutes, and 14 minutes of those are taken up by getting off that ridiculous metal shielding on the A500.

The A5000 comes with 1Mb of RAM as standard and has sockets for another three. The chips required to fill these gaps are rather inexpensive, and expanding your Amiga's memory in this way is actually cheaper than buying some dedicated RAM cards. What's more, this 32-bit RAM belongs exclusively to the A5000, so not only is it incredibly fast, but it permits your other memory expansions to co-exist – comfortably breaking the 8/9Mb limit. The 32-bit RAM is so important to the overall speed of the card that if you bought an accelerator card without any, you'd be completely bonkers.

All A5000s also come with a 68881 co-processor, ensuring any rendering programs are running just as fast as they can. To wring out that final increase of speed and attain a completely hair-gelled Groove Factor Seven, you can copy the system kickstart ROM into the super-fast RAM. As ROMs are slower than RAMs, any program which uses intuition will benefit, and this feature will now work with Kickstart2 as well as original 1.3 systems. Of course, you must forfeit up to half a meg of super-RAM for the privilege. And after all that brain-numbing computing intensity, if you need to run a game which has been written by less-than-legal hacker programmers, you can fall back to using your 68000 by means of a small program and a warm reset.

CONCLUSION

I've been lucky enough to use the A5000 for over a month in a set-up which consists of an A500Plus with a GVP series 2 drive and 2Mbs of fast RAM – all in a Checkmate A1500 box. It's a pretty unique system! As stated previously, the A5000 comes with 1Mb of RAM which means my system has 4Mb of RAM in total. In the test period I have had no unexplained crashes, and in fact no mishaps at all.

The A5000 has behaved perfectly, and it was only when it was removed for the purposes of producing the graph that I appreciated how slow my Amiga was without it. Definitely recommended.

SSL A5000

. . . . at a glance

• 14.4 MHz '020 processor• 68881 maths co-pro • space for 32-bit RAM• compatible with A500/500Plus• Capable of 5.1 MIPS• Shadow-ROM option

Address: Solid State Leisure 80 Finedon Road, Irthlingborough, Northants, NN9 5TZ. Tel: 0933 650677.

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Runs five times as fast as an average Amiga...need we say more?!

EASE OF USE	78%
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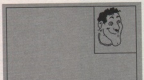
EFFECTIVENESS	92%
FLEXIBILITY	86%
INNOVATION	90%
OVERALL	**88%**

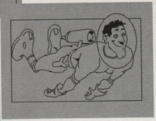
ART GALLERY

Welcome to this month's gallery and, as Tony Hart used to say, 'what a bumper crop of entries we've had'. From the miraculously good to the seriously mediocre (you know who you are!), we've seen them all, and here's the best.

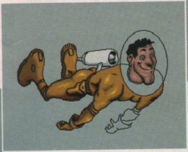
I don't know exactly how many people will remember the old Spectrum classic Lunar Jetman, nor the cartoon strip in Crash! magazine, but that is where this fine piece of artwork is taken from. It only took Ryan Morgan of Pontypridd 4 hours to perfect this 32 colour masterpiece, and here's how...



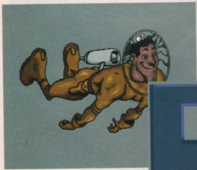
1. This is how Ryan starts all his pictures – a series of rectangles that will completely enclose the main character. This is to show the maximum space he has to work with, as there's nothing worse than spending an hour or so on the head only to find out that you haven't the room to fit in the body.



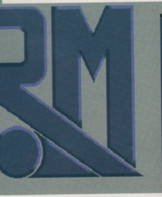
2. With the basic guidelines complete, he then constructed both the head and the body. Notice how it doesn't fit the guidelines exactly, but this is really to stop the drawing from looking too 'square'.



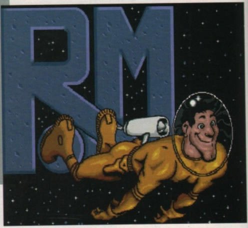
3. The palette has now been selected, and Ryan spent some time using the HSV sliders, which he regards as being seriously underused. The hardest thing he found was getting a good flesh tone, as he didn't want to end up with something garish.



4. Here is the finished Jetman waiting to be pasted onto the dark backdrop. The two bright spots on his helmet are there to suggest that the object is rounded and transparent. The grey streaks behind his head are there so that his hairline won't be lost when the black backdrop is added.

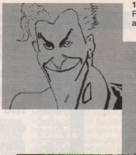


5. To stop the picture looking too cheap, Ryan did a solid background object to pad out the image. The grey was chosen to contrast with Jetman's yellow overall, and so make him stand out.

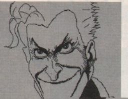


6. The final image. The starscape was done by drawing a couple of stars in a light colour, and then stamping them down with the brush tool. See how the light spots on the helmet and the grey streaks stand out?

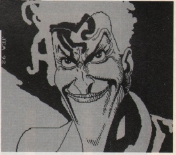
Who could forget the evil imagery of the Joker in The Killing Joke graphic novel? Just in case you forgot, here's Justin Alexander of Bradford with what he claims is his first serious attempt at Amiga art! This mini masterpiece took about six hours to complete, and shows how classic drawing techniques can be easily applied to the Amiga.



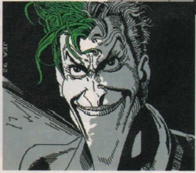
1. First Justin did a ten minute sketch using a mixture of Deluxe Paint's straight, curved and freehand tools, and then used this as a base for the shapes and proportions of the face.



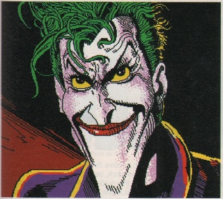
2. After adding more shape to the whole picture, he used the same tools to add fine details. Starting with the eyes and nose because he found it easier to perfect proportions and sizes around them. This took about one and a half hours.



3. After two more hours and ten cups of tea (!!) he had the facial features outlined. He also added a rough outline for the hair.



4. Two more hours and the hair was completed. He then started to colour with *Deluxe Paint*'s fill tool but soon realised that this wasn't very practical due to the small areas of detail. So, he decided to use the stencil option which proved much easier.

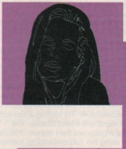


5. Stencilling out all the colours except the white, he used the airbrush for extra shadow.

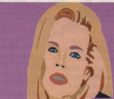
ART DEPARTMENT

Remember, if you want to get your work in CU's Art Gallery, send us an IFF disk with the image broken down into the various stages of construction, along with a description of what's happening in each shot. Send your disk to: CU Gallery, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

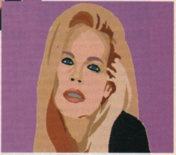
Thanks to Lee Martin of Bristol for this picture of pouting temptress Kim in a classic 'innocent kitten' pose. Drawn in 32 colour low-resolution using *Deluxe Paint IV*, this is a perfect example of how varying shades can add depth to an image.



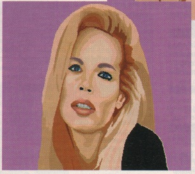
1. Lee started off with a rough stencil of the picture on clear plastic. He then stuck the plastic to the screen and traced it with the mouse.



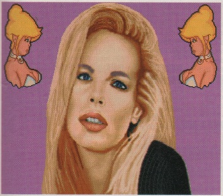
2. Next Lee studied the picture and mixed all the colours needed. He then used the flood fill option to fill in the picture with flat colours like a cartoon character.



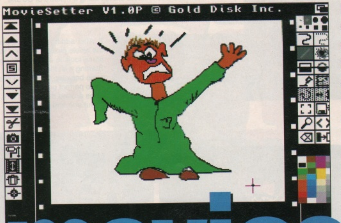
3. Working from the photograph, he started to add extra shaded areas around the face and hairline. As the picture began to really take shape, he removed the stencil lines by drawing over them with the colour immediately next to them.



4. Then he started to concentrate on the important areas of the face, such as the eyes, nose and mouth. As these are generally regarded as the most recognisable parts of the human face, a lot of care needs to be taken. If these aren't done right, the face can look completely wrong. Next, he added some proper shading to the hair.



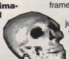
5. All of the colouring up to now has been flat colour areas. So Lee finally used the freehand fill in conjunction with a small, chequered brush to add extra shades between areas of colour to give a smoother skin tone. Once the face was finished, he smoothed around the eyes and mouth. Then came the hair, which looks very hard, but is probably the easiest part.



Last month CU Amiga gave away Gold Disk's *MovieSetter* on the coverdisks. We showed you how to create your own productions using the cartoon animation from the disks and how to draw your own characters from within *MovieSetter*. This month, we're going to take a closer look at this marvellous program.

moviesetter

This month we take a more detailed look at track editing and explain exactly what all those pop down menus do. The artistic Picassos amongst you may have wondered what some of the icons do in the set editor. The set editor is the 'animation station' of *MovieSetter* and we'll be taking you through the more powerful features of creating your own animations. After all that, I guess you'll be wanting some hint and tips, eh? Cor, you're a demanding lot, aren't you?!



TRACK EDITING

You can edit tracks while creating individual tracks or after it has been completed. Once you have started creating a new track you CANNOT move around the movie. Attempting to do so will force *MovieSetter* to automatically complete the track for you. Also, many menu options are disabled (ghosted). As long as the mouse pointer is carrying around a face, you are creating a track. So take note, folks!

CREATING A NEW TRACK

You should know how to create a new track as we discussed this in last month's tutorial. Anyway, just to refresh your memory here's the method again. Take ten ounces of self-raising flour, oh, wrong method! My mistake. Try selecting New from the Track menu instead. Now, select a set from the Set Load requester and after it has loaded it will attach itself to the mouse pointer.

Placing the set on the background using the left mouse button will advance to the next frame and switches to the next face. Clicking down with the left Amiga key pressed will switch to the previous face and holding down the Alt key will not switch the faces as the frames advance. Pressing the Control key (Ctrl) and clicking will complete the track after stamping down the final frame. Please note that you can also control which face to stamp down by using the '<' and '>' keys to flip through the available faces in the selected set.

If you want the face to go off the screen (i.e. a man walking out of shot), you can shift its position on the mouse by hitting the arrow keys. Holding down the Alt key while doing this increases the distance that the face moves. Pressing the letter 'C' on the keyboard (ignore the quotes) will return the face to its original position. Another helpful feature is the Hold requester which will hold a face in the same place for a number of frames. Select Hold from the Track menu and enter the number of frames you want the face to stay put. Easy!

Try using the Repeat requester if you have just stamped out a track with a ferris wheel which has just completed one rotation. Instead of doing it again manually, the repeat requester will repeat the same sequence from the beginning of the track to the current position. Neat Stuff!

The most powerful track creation tool is Guides. Guides allow automatic creation of smooth linear and elliptical paths which are affected by both velocity and acceleration. Try loading a Set and go to the Special menu and select Guides. The Guides control window will then appear. You can define a path using the 'rubber-banding' method, like the line tool in *Deluxe Paint*.

For a linear guide, drag out a line that you wish your track to follow. Do this by holding down the left mouse button and moving the mouse, releasing it when you've finished. You can draw another one if you mess the first one up. The elliptical guides can be rubber banded by pressing the elliptical button. Click the mouse in the edit window and drag out an ellipse. When you release the button, you should select the starting point on the ellipse by positioning the mouse and clicking.

You may also affect the path of the guide you have rubber-banded by changing the velocity and acceleration. You can have an acceleration affect on the guide in either the vertical or horizontal direction or both.

Once you are satisfied with the shape and spacing of your guide, there are two ways to make use of it. In the Guide Control window 'Auto' guide creation tells *MovieSetter* to create the specified number of frames along the guide, automatically cycling through the faces from the track's set. Press the close window button to create the track elements automatically.

If you wish to have more control over the stamping of the track, select Manual. Select Close window to use the guide for the creation of your track. When you move the mouse, the current face will 'snap' to the closest point on the guide. You may turn the guide on or off by hitting 'G'. You may also create a new guide at any time.

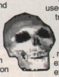
The Shift option from the Track menu toggles an editing feature that is similar to insert/overstrike in word processors. For example, in frame 50 you are on a desert background and frame 51 the background changes to a space ship. At frame 50 you wish to add a camel walking for 30 frames. With Shift turned off, the camel would walk one frame on the desert and 29 frames in the space ship (most likely, not the desired result!) With shift turned on, all events and tracks that have not yet occurred will be delayed. In essence, you are inserting new frames as you stamp out your track. With Shift off, you only add new frames when you reach the end of the movie. Adding a track, therefore, does not necessarily increase the length of the movie.

In the unlikely event that you should make a mistake (CU readers make a mistake? Naaa!), you can back up and delete the previous track element by hitting the Backspace key on the keyboard (the delete arrow pointing left). *MovieSetter* will automatically update the face attached to the mouse and move backwards one frame.

EDITING AN EXISTING TRACK

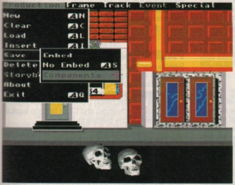
Once you have completed a track you will probably want to make small adjustments to synchronise it with other tracks you have already created. For this purpose there are many tools available in the Track Edit window.

Track hold, repeat and guides may also be used as often as you like during the editing of a track. To use them, you must first select the track and then press the Insert After or Insert Before buttons on the Track Edit window. Take a look at the tools and icons discussed in last month's tutorial. Last month we printed a guide explaining all the Track editing icons and said exactly what they did.



PRODUCTION MENUS

In the production screen, *MovieSetter* has many built-in features that will give you extra control over all the elements that make up your animated film. We're now going to take a look at what those menu items mean and how they can help you become a more effective movie producer



The production menu of Moviesetter is not just for loading and saving your animations, but for manipulating them as well.

NEW

Erases the current production from the Amiga's memory. All of the sets and backgrounds remain in RAM, however.

CLEAR

Clears the current production from the Amiga's memory and removes all of the sets and backgrounds from RAM, so you really will be starting from the beginning.

LOAD

Loads a production from disk. A load requester will appear asking which production to load in.

INSERT

If you have created several scenes and saved them in separate productions, you can insert a production inside an existing production. Note that the inserted production will go after the current frame.

SAVE

There are two different way in which *MovieSetter* can save your production: Save Embed will save the *MovieSetter* script plus all of the sets and backgrounds. This will produce a large file which is a contained *MovieSetter* production. Save No Embed will ONLY save the script which will be a small file but will require all of the disks which contain the background and set information if you want to load the script back in. If you plan to give a copy of your production to a friend then use the Save Embed option.

COMPONENTS

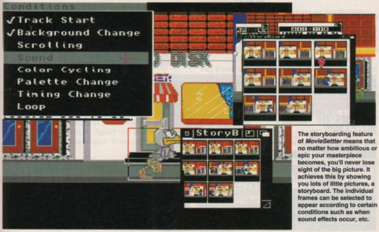
If you load a production that was saved embeded, you may want some of the sets, backgrounds and sounds for yourself. This will automatically save the components for you after telling *MovieSetter* where you want them saved to.

STORYBOARD

This gives you easy editing power over a *MovieSetter* production. Storyboard is a visual 'database' of all the individual pieces that go into creating your animated movie. The storyboard option opens its own window, which can be resized, and shows the 'key' frames of the production in a small format, just like professional animators use!

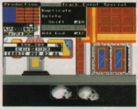
Storyboard contains a Conditions menu that sorts the production according to the events that you choose. Events are selected using the Condition menu. You can go to any frame in the production just by clicking on the frame shown in the storyboard window. By sorting the storyboard by, for example sounds, you will only be shown the frames where a sound event begins. It makes editing a doddle! Furthermore, you can combine as many search criteria as you like. Different criteria from the Conditions menu are: Track start, Background change, Scrolling, Sound, Colour cycling, Palette change, Timing change, and Loop.

Only nine frames are shown at a time so hitting the arrow up key on the keyboard will show the next nine frames and the down arrow shows the previous nine.



The storyboarding feature of *MovieSettter* means that no matter how ambitious or epic your masterpiece becomes, you'll never lose sight of the big picture. It achieves this by showing you lots of little pictures, a storyboard. The individual frames can be selected to appear according to certain conditions such as when sound effects occur, etc.

FRAME MENU



The frame menu allows the editing of individual frames of your production, just like the cutting room in a real movie studio.

DUPLICATE

Creates a duplicate of the current frame by creating a copy of all visible track elements. Events in the current frame are NOT duplicated.

DELETE

Removes a specified number of frames including the current frame. Removing ten frames or more will takes a long time to do, so hang loose, *MovieSetter* has a lot of hard work to do!

SHIFT

Last month we discussed Shift in detail in the Track Creation section. But briefly, with Shift on (checkmarked) any tracks added will shift tracks and events that have not yet occurred (i.e. the track will insert, NOT overlap). With Shift off, new frames will only be added when the new track goes beyond the end of the movie.

ADD START

Adds the number of frames specified before the first frame in the movie.

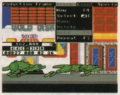
ADD END

Adds the number of frames specified to the end of the movie.

TRACK MENU

NEW

Place *MovieSetter* in Track Creation mode. Select a set and stamp out your track. See the section on track creation for more information.



The track menu is where you can transform your sets into animated sequences

EDIT

Lists all tracks visible in the current frame. Double click on the track you wish to edit. (This is useful if you wish to edit a track which is obscured).

NAME

Shows the name of the currently selected track and allows you to change it.

DELETE

Deletes the currently selected track.

HOLD

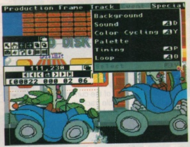
Automatically holds the position of your character for a specified number of frames.

REPEAT

You can repeat a sequence by specifying the number of frames that *MovieSetter* should mimic in your track.

MOVIESETTER

EVENT MENU



Among other things, the Event menu is the place to trigger your sound effects from.

BACKGROUND

Backgrounds should be in the IFF format, lo-res pictures, which form the backdrop behind the production. This menu item has three sub-items:

SELECT

Loads a new background for the current frame.

SCROLLING

Starts a scrolling event at the current frame. Scrolling can be horizontal or vertical and can have variable acceleration and start/end velocities. Start velocity is the amount of speed the background scroll will have initially. End velocity is the speed that the background will have be travelling at when it reaches its top speed. Experiment with different values to achieve the best results.

BLANK

Removes the current background while leaving the colour palette the same.

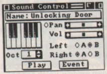
SOUND

MovieSetter lets you add sampled stereo sounds to your productions. After choosing your sound you are asked to load an IFF format mono or stereo sampled sound. Selection of a sound places you in the Sound Control Window. The piano keys can select the sample's pitch. The Play button lets you hear the sound at the current settings. Clicking on the circle besides Pan will activate the panning controls. This lets the sound be played on either the left or right speaker or somewhere in-between. (In other words Labour, Tory or Liberal! A little bit of politics there for you, he says slipping into a Ben Elton voice!)

The Event button creates a sound event according to your settings in the Sound Control Window. Please note that a new sound event will interrupt any sound that is currently playing on the same channel.

SOUND NOTES

While sound may seem difficult to grasp at first, in practice it is quite easy. Imagine adding a stereo sample to a bouncing ball animation. First select a suitable bouncing sound from the disk. If the ball is bouncing from the left of the stage, turn panning on and drag the pan slider over to the left. Now play the production forward one frame at a time until the ball hits the ground. Select Event and you'll hear the sound everytime the frame is played. Each time the balls hits, add another sound event. Gradually move the pan slider over to the right so the sound follows the ball accross the stage. Rather nifty, eh?!



Name: Unlocking Door

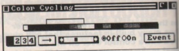
Oct 1

Left ○A ●B

Right ●A ○B

COLOUR CYCLING

MovieSetter allows ranges of colours to be cycled during a production. Cycles can run at different speeds and up to four can be running at any one time. The cycling window shows you the colour palette of the current frame placed in a row. Select any number between one and four as the first cycle. Now choose a range of colours by holding down the left mouse button at the first colour in the range and then dragging the horizontal bar that appears to the last colour in the range. You can adjust the direction of the cycle by toggling the arrow button and the speed with the scroll bar. The Tab key on the keyboard will toggle the cycling on or off. Event places the cycling setting as an event.



●Off ○On

IFF colour cycling is supported by *MovieSetter*. You can adjust the sped, direction and range of the cycle with this requestor.

PALETTE

Palette events change the colours off the current frames to any new hues that you desire. Choosing palette places you in the palette window. The six sliders are for red, green and blue levels and hue, luminance and saturation (similar to *DPaint III*). The Spread, Exch(ange) and Copy buttons work in a similar way to the buttons in *DPaint*.

TIMING

Regulates the speed that the production is played at. Timing can be changed as often as you like. See the timing charts last month for more information. Remember that the maximum speed for animation in Europe is 50 frames per second on a PAL system and 60 in America.

LOOP

Placing a loop simply tells *MovieSetter* 'when I get to this frame, jump backwards'. You can have as many loops as you like, all you need to specify is the start frame, the frame to jump backwards to, and the number of times to loop.

SELECT

Shows all the events in the current frame. Events can be edited by double clicking on their name in the list, or deleted by single clicking and pressing the delete button.

SPECIAL MENU

SET EDITOR

Invokes the Set Editor area of *MovieSetter* with the currently selected set. See last month's section on that for more detail.

SELECT SET

Permits you to load, delete or select a set.

GUIDES

Often in the creation of a production, it is necessary to place a track down in an exact location. Guides enable a path that the set will follow automatically. See this month's section on Track Creation for more information on Guides.

HISTORY

Leaves images behind as a track is stamped out to aid in the placement of the new track elements. History works on the currently selected track. The number of frames that are left behind is selectable through keyboard shortcuts. Control and the up arrow increase history and control and the down arrow decrease the history.

BORDERS

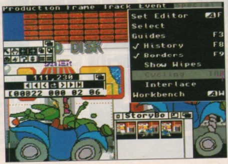
Toggles the display of the track element borders. Borders are the rectangles around sets that define their area.

SHOW WIPES

If the production contains wipes they will be shown while you edit new tracks. While this is vital in playback, it can be a little confusing in edit mode. Select this function to toggle it on/off.

CYCLING

If the production contains wipes they will be shown while you edit new tracks. The same here applies to the Wipes menu option too.



INTERLACE

Toggles the Amiga's interlace video setting during full speed playback. Interlace should be turned on when transferring your productions to professional quality video tape. Interlace does not increase the vertical resolution, but removes the faint black lines that exist between scan lines and makes the picture 'smoother'.

WORKBENCH

Choosing Workbench will attempt to open or close the Workbench in the screen behind your *MovieSetter* production. As *MovieSetter* likes all the memory that it can get, closing the Workbench frees up some more memory for *MovieSetter* to use.

The Special menu is mainly concerned with global system set-up such as displaying Guides, a history of frames, etc.

SET EDITING

Last month we discussed how to create and edit your own animation using the built in Set Editor. This month we're going to take a look at all the editing icons in detail.

BUILD IN BRUSHES

The set editor has eight built in brushes: A pixel, a cross and two circles and four squares of different sizes. Click on the brush you wish to use to draw with.

CONTINUOUS FREEHAND TOOL

Selecting this option will draw an unbroken line with your currently selected brush.

DOTTED FREEHAND

This produces a broken line when you draw with it. The faster you move the mouse the further apart the images are placed down.

STRAIGHT LINE

To draw a straight line after selecting this tool, click and hold down the left mouse button at the start point of your line. Now move to the end position of the line and release the button.

AIRBRUSH

Use this to create 'stipple' effects. It produces a fine spray using your currently selected brush.

RECTANGLE TOOL

This allows the easy drawing of rectangles, filled or unfilled. To draw an unfilled rectangle, click on the top half of the gadget or the bottom half for a filled rectangle. Now go into the drawing area and hold down the left mouse button where you want the rectangle to begin. Drag the pointer to the opposite corner of the rectangle so you can achieve the correct size and shape. Release the button and the shape will be drawn.

OVAL TOOL

This allows the drawing of circles or ellipses, filled or unfilled. It works in the same way as the rectangle tool except that you position the mouse pointer in the centre of the circle which you want to draw, not at the corner.

FILL TOOL

The fill tool will fill any enclosed area with the currently selected colour.

BRUSH TOOL

Picks up an area of the screen to make a custom brush. Use it in the same way as the rectangle tool, except whatever lies within the rectangle you draw will be picked up as the new custom brush.

RESIZE TOOL

This will stretch or shrink the current brush in any direction. Select this tool and drag the brush into its new shape. This only works with custom brushes.

ROTATE TOOL

This will show a rectangular outline of the brush size in the drawing area which can be rotated by holding down the left mouse button and moving the mouse until the angle you require is reached. Release the button and the new brush will be displayed.

FLIP TOOL

The left side of this tool flips the current brush along the vertical axis and the right side of the tool flips the brush upside down. Flippin' 'eck!

LOAD BRUSH

This will load a brush or picture that you've previously saved to disk into the clipboard area. A brush in the clipboard area can then be picked up and moved directly into the drawing area of the set editor.

MAGNIFY TOOL

This zooms in to the area selected after you have chosen this tool. Please note that only the single dot pen is activated in this mode for fine detail touch ups. Selecting the tool again switches off the magnifier.

ZOOM

This zooms in and out while in the magnify mode. Select either side of this tool to zoom in or out.

UNDO TOOL

Clicking on this erases the last action you made in the drawing area. Use this if you make a mistake.

CLEAR TOOL

This erases everything from the drawing area. Use Undo if you click on this by accident and the screen will be restored.

CLIPBOARD WINDOW

This window is opened by pressing on the load brush gadget. This is where brushes are stored before moving them into the set editor. These are the gadgets you should find in the window:

DISK TOOL

Goes to the disk requester, allowing you to load a new picture or brush into the clipboard window.

GRAB TOOL

Selects everything in the clipboard window as a brush. This brush can then easily be stamped into the set editor with the left mouse button.

RECTANGULAR BRUSH TOOL

Selects a framed area as the current brush. See the description of the Brush tool.

POLYGON BRUSH

Selects an irregularly shaped brush. Use a left click to set the first point. Notice that there is now a rubberbanded straight line that follows your mouse. Each time you press the left button, this anchors the line down. Where the last anchor line meets the first one, the area contained within the outline is your new brush. Double clicking will join the last point to the first one for you.

MOVE TOOL

The Move tool cannot be seen unless you click in the clipboard window without selecting one of the other gadgets. A hand will appear which can be used to move the picture underneath it. Use it to scroll to different parts of the clipboard picture.

SET EDITOR TOOLS

These tools can be found down the left side of the set editor screen. They control various editing functions used in the creation of animated sets. Let's start at the top and work our way down in turn.

GO TO BEGINNING OF SET:

This places you at the first face of the current set.

GO TO PREVIOUS FACE:

Places you one face back from the one shown in the current set.

PREVIOUS SET BACKWARDS:

Cycles quickly through the faces in reverse to give you an idea of how the set looks when animated. The up and down arrows on the keyboard speed up and slow down the animation.

STOP PREVIEW:

Stops the set preview, or press the space bar instead.

PREVIEW SET FORWARDS:

Plays the set forwards in real time.

GO TO NEXT FACE:

Advances forward by one frame.

GO TO END OF SET:

Advances to the last face in the current set.

CUT:

Cuts the current face from the set and places it in the paste buffer.

COPY:

Makes a copy of the current face and places it in the paste buffer.

PASTE:

Clicking on the top half of the gadget places the face from the paste buffer before the current face in the set. Clicking on the bottom half of this gadget places the face from the paste buffer after the current face in the set.

INSERT FACE:

Clicking on the top half places a blank face before the current face in the set and the bottom half of this gadget places the blank face after the current face.

DELETE FACE:

Erases the currently shown face from the set.

REGISTER MARK:

Allows for the placement of registration marks on your set. The registration mark is the pixel where MovieSetter lines up the animation. We talked about it last month. For more information on this, see the editorial in last month's issue. For those who missed out on our MovieSetter offer, don't worry, as we'll be giving you details on how to get your copy at a special discount rate next month.

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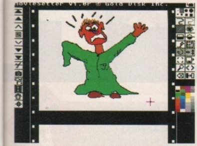
MOVIESETTER

HINTS AND TIPS



Using the set editor you can create your own graphics or import IFFs from other paint packages such as *DPaint*.

- Use multitasking! Several windows displaying different editing information can be opened at the same time. (This is not an IBM PC, you know!) Each window can be resized and selected when it is needed. In practice, you can leave the storyboard up and running in the editing process. This allows you to sort the production in different ways, letting you move to the beginning of the event you want to edit.

- Coordinates are available when laying down a track. The player control window lists the current screen location of the mouse pointer.

- Most sets can be registered approximately in their centre. Some sets are better registered at a certain point in the drawing window. We've found that walking character sets work best when registered to one of the feet. This reduced the chances of 'moonwalking' or floating effects.

- Keyboard shortcuts make life easier. Using the mouse for every choice sometimes means that you must leave the editing area. You can loose track of a set's placement when you do this, so using the keyboard means that you can concentrate more on the animation's path.

- Occasionally, bringing a large set or sound event into the production will slow the existing animation down a bit. To get around this problem use the timing control to slow the entire production down to a speed that *MovieSetter* can handle successfully without sudden slow downs.

- The on-screen palette gets its colours from the background picture. If no background is loaded the program gets the colours from the current set. If you want all the colours to remain the same, use the same colour palette through out the entire production.

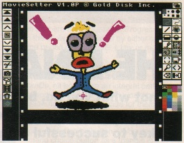
ANIMATION TIPS

- The cornerstone of good animation is the ability to apply exaggeration to all the elements in your production. Try making your characters so they appear to be made out of jelly. Tex Avery was the master of cartoon characterisation and exaggeration. Try renting some of his classic cartoons and see how his characters reacted in a surprised way. They would hover in mid air, their ears, eyes and other parts flung in all directions and there was usually some funny sound effect, like a claxon. Practice some of your own and experiment!

- Remember that objects such as people and cars require time to build up speed from a standing position. Use a few extra frames to achieve acceleration and momentum when you slam on the brakes.

- Take a look at some of the brilliant Eric Schwartz's animations available from most PD companies. Many of his greatest productions were created using *MovieSetter* and can be obtained for a couple of pounds each. Eric shows how it is perfectly possible to create animation on a computer which is comparable to the authentic pen and paper stuff. His characters show surprise and other expressions in the most comical and classic ways.

- Watch how things work in real life and act out character movements and expressions as you draw them. Watch yourself in a mirror or get a friend to pull faces while you draw them.



If you have a bit of artistic talent you could soon be turning out productions and become as famous as Eric Schwarz.

KEYBOARD SHORTCUTS

Here are some of *MovieSetter*'s keyboard shortcuts. Use them instead of the mouse. You'll find it's quicker and more convenient. An italic capital 'A' refers to the right Amiga key.

GENERAL

F1 – Hide/show player control window

F2 – Hide/show track edit window

F10 – Hide/show title screen

TRACK EDITING

LeftAmiga + Click – Stamp track element, switch to next face

Alt + Click – Stamp track elements, switch to previous face

> – Next face

< – Previous face

Ctrl + click – Complete track and stamp last track element

F5 – Complete track

Backspace – Backup and delete last create track element
G – Guide toggle on/off

Del – Delete visible track element of current track

Shift – Constrain mouse movements to straight line

TRACK CREATION/ PAST/MOVE

Arrows – Shift registration mark

Alt + Arrows – Shift 'em faster

C – restore registration mark

NON EDIT MODE OR PLAYBACK

UpArrow – Play forward

DownArrow – Play reverse

RightArrow – Step forward

Alt + RightArrow – End of movie

LeftArrow – Step reverse

Alt + LeftArrow – Beginning of movie

IN PLAYBACK ONLY

P – Pause

SpaceBar – Stop

IN STORYBOARD

UpArrow – Next 9 frames

DownArrow – First 9 frames

SET EDITOR MENUS

Set/New – A N

Set/Load – A L

Set/SaveAs – A S

Set/Copy – A C

Set/Exit – A Q

Special/ShowRegMarks – A M

Special/FlipSetHoriz – A X

Special/FlipSetVert – A Y

PRODUCTION MENU

Production/New – A N

Production/Clear – A C

Production/Load – A L

Production/Insert – A I

Production/SaveNoEmbed – A S

Production/Storyboard – A T

Production/Exit – A Q

FRAME MENU

Frame/Shift – A H

Frame/AddStart – A A

Frame/AddEnd – A Z

TRACK MENU

Track/New – F4

Track/Edit – A E

Track/Hold – F6

Track/Repeat – F7

EVENT MENU

Event/Background/Select – A B

Event/Sound – A D

Event/Colour Cycling – A Y

Event/Timing – A P

Event/Loop – A O

Event/Select – A V

SPECIAL MENU

Special/SetEditor – A F

Special/Guides – F3

Special/History – F8

Special/Borders – F9s

Special/Cycling – Tab

Special/Workbench – A W

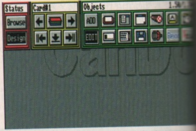
GRAPH

PART 4

Over the last four months we've witnessed Peter Lee's Star Trek animation develop from storyboard to fully-fledged micro-movie. This month our graphics maestro takes a look at several presentation packages to help put the finishing touches to your sci-fi extravaganza.

THE FINAL FRONTIER

It's not what you do, but how you do it that's important. Presenting your work in an accessible format is the key to successful animation work, and this month Peter Lee takes a look at some of the best presentation packages currently available for the Amiga.



The main menu of *CanDo* looks pretty bare – but the functions contained in the program are far from Spartan. You can define text windows, sound events and even pull down menus from here.

NEARING THE END

After you've completed your movie (and let's take credit for this, what we've built up over the past four issues *is* a mini-movie) you'll need to edit and showcase the final animation.

As we've progressed, using *Deluxe Paint* to create our various segments, we've built up several distinct animation sequences. And unless you have plenty of memory, the only way to do your work justice is to present these individual sections as professionally as possible. The same is true of any related sequences you may create – having the user operate the various segments of your display interactively is far more satisfying than simply looping through the complete story in one go. For one thing your work deserves to be savoured more fully a portion at a time.

PRESENTING...

In this final installment we'll look at a number of presentation packages first, then move on to the more technical world of animation editing. Thanks to the Amiga's stronghold in video work, and the blessing of a standard ANIM format, several programs are available to help with showing off your wares. Here are mini reviews of some of the best...

CAN DO

HB Marketing, Price: £101.16, Tel: 0753 686000

PRESENTING...

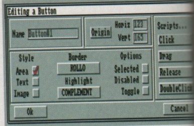
I have to admit that this is my preferred piece of software. While it's much more than an animation player, it does the job beautifully. The program allows you to construct a front-end for many kinds of applications – presentations, your own programs, menu structures and so on. But these are secondary to our main aim which is to create a comic-book style package to show off our Star Trek animations.

Although the past few months have been graphic intensive, we only really need to draw one more screen now, then see how *Can Do* can help in bringing our story to life. Although the program can create and draw its own click buttons – areas on screen which activate an event when a mouse button is clicked within them – I prefer to design my own initial display screen, with buttons of my own. There are no constraints to the size or nature of these – you can opt for triangular, circular, or standard rectangles. The beauty of doing it this way is that you can draw your screen in keeping with your subject.

CanDo isn't fussy about the IFF images it loads. You may have a digitised picture in your collection which would form a perfect back drop for your menu – all you have to do is load it into *DPaint* and draw in your buttons. These should be labelled according to where you want *CanDo* to lead the user. In the case of our animation sequences, each can be named as chapters so the viewer can select which chapter (or sequence) to view by clicking on one of your buttons. You also need to draw an Exit button on there, too, (user-friendliness) and maybe one which will lead to a screen of credits.

FONTS AND STYLES

CanDo allows you to print to the screen with varied fonts and styles, so you could put your name up in lights if you so desired. One button could even be used to cycle through the entire anima-



Name Button#1

Horiz 123

Vert 165

Area ☑

Text ☐

Image ☐

Border ROLLO

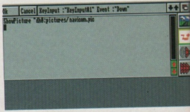
Highlight COMPLEMENT

Selected ☐

Disabled ☐

Toggle ☐

CanDo lets you size and place buttons on your IFF images. It's up to you what the program does once it senses a button has been clicked. The options on the left even allow you to load in an irregularly-shaped brush as a button (image), and on the right you can opt for one of four mouse events with which to launch a script.



```
KeyInput :"KeyInput#1" Event :"Down"
```

```
ShowPicture "dh0:pictures/navicom.pic
```

Writing a script in *CanDo* can be as easy as clicking on one of the icons (right), or learning the scripting language. The help feature is a model of friendliness, too.

ICS DIY

tion. Although you may not have enough memory to append the various parts of the animations into *DPaint* at one time, *CanDo* will show them consecutively, even if there is a minor pause as each one is loaded. Once the menu screen is saved, it can be loaded in *CanDo* as the first item to be displayed – the program calls each element in a script a Card, and you can easily have one card lead to any other in the pack. Each of your animation sequences would be a separate card, accessed by a hit button on the menu screen you've drawn. Telling *CanDo* where a hit button is located is as simple as dragging out a correctly-sized box over that part of your image where you want the hotspot to be. After that, you simply have to tell the program what action to perform once it detects a mouse-click – in our case a Goto Card # ('#' is the card number of your animation sequence) where the animation will be played. Using the built-in script language (which is much easier than AMOS, I have to admit) you can loop the sequence until a particular event (mouse click, keypress or timer) then go back to the menu. It's all very professional, and as a runtime module is provided for free distribution with your work, no-one will know that the presentation wasn't programmed in C! Honestly, once you've got over the intricacies of setting up the interface and testing it out, your work will boot up on the Amiga and work as if some computing egghead had spent six months writing the code.

As well as *CanDo*'s presentation abilities, it can also play sounds – so what's to stop you using digitised effects from the Star Trek show itself? They add a new dimension to Amiga shows, and whatever your animation work, sound FXs add another layer of professionalism. The program can be used to show IFF images and text in windows, so a virtual Hypertext system is well within your reach. Writing complex interactive graphics presentations on *CanDo* is not quite as simple, but it is the easiest way I've found for mixing information and explanatory diagrams whilst giving the user complete control.

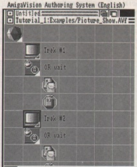
AMIGA VISION

Commodore, Price: £111.63, Tel: 0628 770088

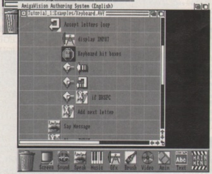
DARK HORSE

This brilliant multi-media package from Commodore is something of a dark horse. It's a tricky blend of icon and script-based control, but can be used to create totally professional presentations containing animations, stills, sounds – even video if you have the hardware. To use an analogy – if *CanDo* is the Lotus Esprit of the presentation world (a speedy little racer), *AmigaVision* is the BMW – sturdily built and oozing reliability.

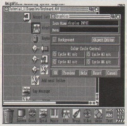
The flow of your presentation is represented on the main screen as a series of icons, with loops, branches and subroutines forming a visually informative cascade down the screen. Routines are built on the basis of Parent and Child objects, and for our animation example the whole session would be contained in one Module, with as many Children as there are sequences. Progress through the show can be made by either specifying a time period or waiting for a key or mouse click to continue.


AmigaVision Authoring System (English)
Untitled
Tutorial_1:Examples/Picture_Show.AVf
Trek #1
OR wait
Trek #2
OR wait

Building up a script in *AmigaVision* starts off easily enough by dragging icons onto the editing grid...

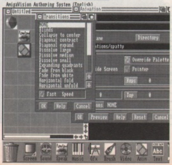

AmigaVision Authoring System (English)
Tutorial_1:Examples/Keyboard.AVf
Accept letters loop
display INPUT
Keyboard hit boxes
if BKSPC
Add next letter
Say Message
Screen
Sound
Speak
Music
Gfx
Brush
Video
Anim
Text
MAIN MENU

...and as you can see, there are plenty of icons to choose from...


Graphics
Icon Name display INPUT
Memo
Background
Object Editor
Color Cycle Control
Cycle #1 n/c
Cycle #3 n/c
Cycle #2 n/c
Cycle #4 n/c
OK
Preview
Help
Reset
Cancel
Add next letter
Say Message

it's only when you set options within the icons – such as here in the Graphics requester – that the grey matter starts to kick i n...

...until you meet an options box such as this (below), which is one of the most daunting tasks facing you – the Expression Editor.


AmigaVision Authoring System (English)
Untitled
Animation
Transitions
NONE
Blinds
Collapse to center
Diagonal contract
Diagonal expand
Dissolve large
Dissolve medium
Dissolve small
Expanding quadrants
Fade from black
Fade from white
Horizontal fold
Horizontal unfold
Fast Speed
OK
Help
Cancel
Directory
tions/spatty
Override Palette
Pointer
ide Screen
Keys 0
Top 0
ons NONE
OK
Preview
Help
Reset
Cancel
Screen
Sound
Speak
Music
Gfx
Brush
Video
Anim
Text

SPEECH SYNTHESIS

As in *CanDo*, hit boxes are an integral part of *AmigaVision*, so your first screen would be of the menu, allowing the user to decide for themselves which route to take. One feature of *Vision* which *CanDo* lacks is the ability to define a polygon area as a hit button. If you drew a menu choice button as a triangle in *CanDo*, you would have to load it in as a separate brush onto the main image if you wanted the specific shape to be the hot-area. In *Vision*, you simply lasso around the relevant area. *Vision* also has great control of on-board speech synthesis so you could, in our example, have either a narrative to the story or have the Trek characters actually say their lines instead of printing out text on screen. In 'writing' your script (I use the word advisedly) you select icons which perform the desired function, then add it to the editing area. Double-clicking on an item – for instance the one representing graphics, opens up a requester where path and display options are specified.

Amiga Vision is an all-singing presentation package, but the learning curve is steeper than *CanDo*. And when you want things done simply and quickly, *CanDo* is always my first choice.

ELAN PERFORMER

HB Marketing (comes as part of *Media Station* package), Price: £179.90, Tel: 0753 686000

THE EASY OPTION

This rather dated package is a bog-standard presentation utility. It's a piece of cake to use, which makes it an ideal starting-off point. *Elan* will display images or animations at the press of a key and setting it up is as easy as clicking on a filename and then on a key. Once pressed, the key will then show the image. There is no menu structure, but all you need do is draw an initial menu screen, telling the user which keys activate which sequences, and leave them to it. Elan's uses are ➤

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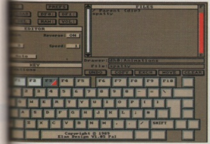


Elan – A neat, no-frills way of showing IFF screens and animations at the press of a button. This is the only control screen it possesses. Simple or what?

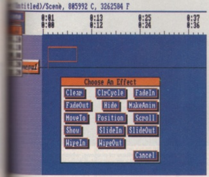
more subtle than a simple slideshow program, provided you structure your images beforehand. For instance, you can create an interactive presentation by including the relevant keypress information on your image as text (i.e. – 'to see the heart pumping blood, press F4'). There is no scripting language, though all loaded elements (whether stills or animations) can be repeated as many times as you like, and each key can have an image locked into it. It's also nice if you have additional memory as the changes from frame to frame is almost instantaneous.

DELUXE VIDEO III

HB Marketing, Price: £99.99, Tel: 0753 686000

ICON-DRIVEN

Still with the heavyweight presentation packages comes the grand-daddy of animation programs. *DVideo III* allows you to tailor your animations in an icon-driven script format, which is more intuitive than either *CanDo* or *AmigaVision*. Animations are contained within Scenes which are placed on Tracks. You can mix stills, text, ANIMS and sound FX within the same scene, which allows you great potential for the Star Trek Animation. Loading title screens or scene-setting IFF images means you do not have to have them eating up frames of an animation. Sequences can start by a mouse click, played at the correct speed (great if some of your segments run too quickly or slowly) and, again, there is a run-time facility to enable you to make the presentation bootable for distribution without the program itself. The interactive nature of the program does lag way behind *CanDo* or *Vision*, so you would need to do some complex pre-planning to achieve a user-selected run-through using a menu system. But it is easy to use and once mastered proves invaluable.



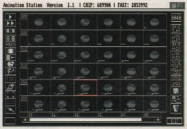
DeluxeVideoIII allows you to perfectly time animations and still screens for a professional-looking presentation. As you can see, the wipe transitions contain a good selection.

ANIMATION STATION

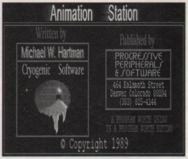
Progressive Peripherals & Software, Price: £N/A, Tel: 0101 303 825 4144

FEATURE PACKED

This program is a workmanlike and inexpensive way to start Animation editing. The NTSC editing screen is a put-off, but there is certainly no shortage of features. It is even powerful enough to allow special effects within frames and sequences. A feature it shares with *Take2* is the ability to have a visual reference of Anim frames in memory if desired. These are represented on the edit sheet as tiny grey images – but they give a nice feel to working with the program. Unusually for Amiga software, there are no pull-down menus. Instead, icons ranged along each screen edge control the show. Frame movement is a point'n'click affair, though you have to be familiar with the workings of the program before you jump in.


Animation Station Version 1.1 | CHIP: 689984 | FAST: 2853992

More than just an editor, this program lets you cut and slice your work into all kinds of order.



Animation Station

Written by

Michael W. Hartman

Cryogenic Software

Published by

PROGRESSIVE
PERIPHERALS
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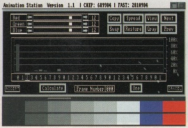
464 Kalamath Street
Denver Colorado 80204
(303) 825-4144

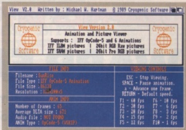
A PROGRAM WORTH USING
IS A PROGRAM WORTH BUYING

© Copyright 1989

A dream of a layout with something of a nightmare in the icon stakes. This is *Animation Station*'s main editing screen. A storyboard has been loaded, and successive frames are ghosted in the cells. This is the heart of the program, and all controls are immediately visible.



The control panel on *Animation Station* which allows you to edit the ANIM's colour palette.



View V2.0 Written by : Michael W. Hartman © 1989 Cryogenic Software

Cryogenic Software

View Version 2.0

Animation and Picture Viewer

Supports : IFF OpCode-5 and 6 Animations
IFF ILBM pictures | 24bit RGB Raw pictures
IFF SHAM pictures | 24bit Pro RGB pictures

FILE INFO

Filename : SunRise
File Type : IFF OpCode-5 Animation
File Size : 06130
Resolution : 320x200x5

ANIM INFO

Number of frames : 65
Average DLTA size : 671
Audio file : NOT FOUND
ANIM Type : OpCode-5 (VSKIP)

VIEWING CONTROLS

ESC - Stop Viewing.
SPACE - Pause animation.
A - Advance one frame.
RETURN - Default speed.

F1 - 60 fps	F6 - 10 fps
F2 - 30 fps	F7 - 6 fps
F3 - 20 fps	F8 - 3 fps
F4 - 15 fps	F9 - 2 fps
F5 - 12 fps	F10 - 1 fps

View v2.0 – This widely available anim/IFF viewer is probably the barest presentation tool available, but it's better than nothing.

TAKE 2

Rombo, Price: £49.95, Tel: 0506 414631

MUCH MORE THAN AN EDITOR

This first class animation editor is primarily aimed at the digitised sequences obtained from Rombo's low cost digitiser, but is equally at home with *DPaint* ANIMS. I still haven't come to love the interface – which uses a dialect of icon which only R2D2 and the author know – but I do love the facilities it offers. Again, the program is much more than an Editor and it allows some excellent fine-tweaking of ANIM files which *DPaint* alone cannot achieve easily, if at all. The heart of the program is a simple exposure sheet, which lists items included in the animation – including sound effects which can be synchronised to kick in at a particular frame. Layering is a powerful feature which lets you combine different elements (of the same screen specification) into one animation. In itself it isn't a presentation package, but it does add another weapon in the armoury of video creation.

P.A.S.E.

HB Marketing, Price: £76.63, Tel: 0753 686000

THE PROFESSIONAL

The Professional Animation Sequence Editor is aimed at the professional user. This is evident in the complex interface which is something of a hindrance to what is the Rolls Royce of editors. Frames are loaded into the editor where they are processed into a proprietary file format called DAF (Difference Algorithm File). From here on in there's very little you can't do to the sequence: cutting, copying, looping from a specified point, speed editing and finally saving multiple scripts for the same sequence. While you cannot play the DAF files as easily as ANIM files, the program can call up the DAF player to run through the sequence as edited. It's a shame about this non-standard approach, but it was done to allow the kind of sophisticated frame editing and manipulation features provided. ANIM frames deny you that luxury.

GRAPHICS DIY

WARP FACTOR 10

Mission completed, it's time for the Enterprise to blast off into the wild blue yonder to boldly keep on going where no starship has gone before. Peter Lee finishes his excellent animation tutorials with the Federation Starship zooming off into the distance...

THIS IS THE END

It's been four issues now, and finally Kirk and Spock have saved the universe by defeating the alien presence. So it's time for a wrap as far as our animation tutorials go. Except we need to tie the whole story up with an appropriate end sequence.

Hopefully, during these past months, you've been able to pick up new ideas and techniques which will make your animations more professional. Our final effect is a simple one, but it incorporates a dual rendering technique which you may sometimes have to call on. The end piece to our animation simply shows a stylised star field with the planet dead centre. A line of text tells the viewer that it's over, and the Enterprise will glide swiftly into infinity. This is achieved by sending the spaceship brush 'back' into the screen (into the Z plane). But there is a slight problem with *DPaint* in that it tends not to like making brushes disappear into nothingness. So the trick is to animate the shrinking brush of the Enterprise as far as the program will allow in around 15 frames, then remove the final small rendering of the ship, and add 10 more frames based on the original picture minus the spaceship. This is achieved from the Animation/Frames/Addframe option, which inserts the current frame as an extra one. Now you can simulate the jump to light speed by having the ship turn into radiating points of light, which can also be sent back along the Z plane until on the final frame they are small enough to erase manually. Draw your sparks of blue light, cut them out as a brush, and animate them in the Z plane exactly as you did with the spaceship.

POINTS TO REMEMBER

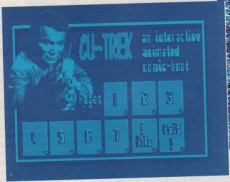
1. You do not want the new animation to overwrite the existing frames, so you must specify the number of additional frames you have created in the Frames counter box in the Animation Move requester.

2. As well as moving both brushes (the ship, and later the light burst) back into the 3rd dimension, you need to move them horizontally too to give the effect of a ship moving across the field of view.

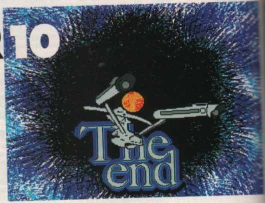
3. Use the anti-alias setting to ensure that as your brushes are reduced, they are rendered in the best possible way.

FINALLY....

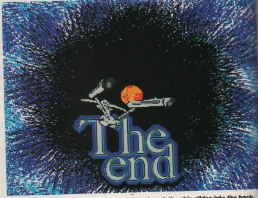
If you have been following the storyboard, you may want to generate a more realistic conclusion to the project by having Spock and Kirk exchange dialogue on the planet, using the same techniques for mouth movement and narrative we've already covered. Alternatively, you could use the scrolling Star Wars text we explained to finalise the story without reverting to character animation again. Whatever you decide to do, you should have enough new methods of animation presentation to cover almost all eventualities, in whatever projects you undertake. Finally, I hope this Star Trek series has been as much fun for you as it was for me. In the words of Spock: Live long and prosper.



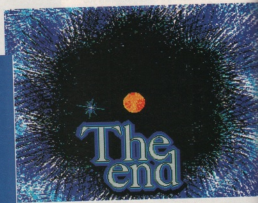
When using presentation software to sho off your animations, the menu screen is all-important.



The USS Enterprise heads for home, the beleaguered planet now safe – Frame 1 of a 30 frame animation.



Kirk and Spock safely aboard, the ship glides into the background, using *DPaint*'s animation power....



...until it disappears in a flare of photons, which have replaced the ship at frame 20 and which have been animated separately.

CUT, TICK & POST.....CUT, TICK & POST

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V776 AMOS LESSON 1 The best os Tutorial program. (APD151)

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V48 TV & VIDEO GRAPHICS (8) cked with background screens for video productions, Different es of graphic styles. **Peel,** takes IFF Pic & peels it down the screen.
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V215 DISKMASTER v3.2 Copies es from one disk to another. **DISK LV** Corrects & repairs bad tracks.
V262 DUPLICATION & BACKUP per Duper,Turbo copy, Sanity copy Copy. Four new disk copiers.
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☐X **V332 AMIGA PUNT PROGRAM** Predict which horse will win with this horse prediction program.
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☐X **V413 WORK STATION** Not just another WB clone. It's a collection of utilities with the Workbench theme. **(2)**
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☐ **V420 CURSOR BASIC COMPILER** Compile any Amiga Basic program
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☐X **V431 IMPLODER v4.0** Reduces file size for storage on hard drives our your own disk collections.
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☐X **V439 AMIGA C MANUAL II v2.0 (4)** The complete C: manual for the Amiga & describes all parts of the C:
☐X **V444 PRINTER DRIVER DISK III** Now contains instructions on how to install them. includes over 90
☐X **V445 JRCOMM v1.02** This is the latest version of the modem program.
☐X **V479 CHESS & CHESS UTILITIES** A collection of chess related Puzzles.
☐ **V484 ADVENTURE SOLUTIONS (2)** Solutions for various games.
☐X **V489 AMIBASE PROFESSIONAL v2.0** Latest version of the excellent Database progam. NEW FEATURES
☐X **V490 MESSY SID v2.0** Will read MS-Dos disks, Transfer any text files to & from the PC. So you can do work on an IBM or an Amiga & swap text.
☐X **V493 DESKBENCH (3)** This is an excellent Workbench replacement
☐X **V497 BEATRIX POTTER CLIP ART** An excellent collection of clip art for any DTP program or Dpaint.
☐ **V498 THIEF SOUND RIPPER v3.0** Finds Sidman 1, 2 (Midi), JHam cracker, future Composer, Sound monitor, Noise/Protracker, Startrekk-er,Delta, sound system, David Whittaker.
☐X **V499 STAR CHART v1.2** This is an excellent star plotting program with some interesting features.
☐X **V515 THE A64 PACKAGE v2.0 (2)** PD version of the 64 Emulator Actually runs faster that 64. Runs 64 basic. Transfers disks from your original 64 disk drive. This is Now in stock for £44.99 which includes the Interface & a full regersted version of the Shareware program.
☐X **V521 PLOTTING & GRAPHICS PLOTXY,** A powerful full featured plotting prog. **PLANS** A computer aided drafting prog. Requires ARP Library & ConMan v1.3
☐X **V522 ARP V1.3 : Conman v1.3c** Makes many im-provements to Dos. Includes full developers guide.
☐X **V523 DICE C COMPILER (2)** Matthew Dillons full featured powerful C compiler & environment system.
☐X **V536 CATALOGUE UTILITIES** A collection of utilities used to Catalog disk/ Video & Tape collections **(2)**
☐X **V549 ELECTROCAD v1.4** Another Updated on the cad electronics drawing preview written in Amos.
☐ **V554 R.S.I. MUSIC MODULES (2)** Another selection of music from RSI.
☐ **V556 RED SECTOR HELP DISK** HelpS you use the RSI Demo Creator.
☐ **V560 DUPLICATION & BACKUP II** A collection of copiers like Amiga Copy, Coder copy, Pcopy, Rattlecopy.
☐X **V567 PRINTER DRIVER GENERATOR** A selection of utilities with various excellent Printer Driver Generators.
☐X **V569 DUNGEON MASTER MAPPER** A little tool that creates maps of dungeons, lands which can be used by a DM for use in AD&D.
☐X **V570 DIRWORK v1.51,** File copier simulal to diskmaster & Sid but contains more commands to hand.
☐X **V571 WHOM II v2.02 (2)** The Dr.Who database program. Gives all info on Dr.Who progams.
☐X **V573 FILE & HD MANAGEMENT (2) : HDCLICK v2.0,** A program selector to make Hard disk Menus. Starts with gadgets. **FILE MINDER,** Utility for maintaining files & Directories. **DOSCONTROL,** Tool that combines the functionality of many separate tools.
☐X **V575 HOME BUSINESS PACK** Excellent selection of utilities based on word processing, Data Manag-ement, Spread Sheets, Accounts & Printing. **(6)**
☐X **V582 DB** A Database with upto 50 fields,max of about 1.2 million records.

☐X **V583 ICONEDITOR III v2.0,** Can create Icons upto 640x200 pixels. icons, Edit & Create any Amiga icon.
☐X **V585 ARCHIVERS** A selection od most archivers, like LHArc, Zoo, LHWarp, Pak, LZ, PKAZip, Zap, Zippy.
☐X **V587 GELIGNITE FONTS (2)** A selection of fonts for use with any DTP Package or Dpaint disks.
☐ **V604 PD COPY v3.0** New disk copy with some extra commands & quick copy modes buit in. (1Mb)
☐X **V605 PRO CALC v1.0** Offers the C or Machine code programmer a 68000 or FFP calculator when is use. (1Mb)
☐ **V606 SAMPLE MAKER v1.0** This works specially for those who are not able to make samples with a sampler.
☐ **V607 PRO TRACKER v2.2** Written by Lars Zap Hamre. Another update to the Ultimate sound making program.
☐X **V610 GOLF SCORES v1.84** It will record each round you play, Store it, make up an eclectic score NEW! You can also show graphs of scores & performance against par.
☐ **V611 FOOTBALL LEAGUE EDITOR v1.0** Want to update your teams league position as the results come in.
☐X **V620 ASPICE v3.2** Circuit Analysis A full featured program for electric circuit
☐X **V621 EDWORD v2.2** is a fully featured & operational Word processor which offers all standard features & More like Powerful ones.
☐ **V624 NIB COPIER v2.0** Will copy in AmigaDos, Index Nibble modes, search mode & special parameter copy.
☐X **V625 NCOMM v2.0** Contains, LHArc v2.0, LHArca v1.02, Zoom v5.40, DMS v1.03, LHA v1.11, LHASFX v1.11.
☐X **V627 DPAINT FONTS No's 1-3 (3)** The latest selection Fonts for use with any IFF DTP Program.
☐X **V630 AMICASH v1.0** Basically just keeps track of your transactions with your account/Bank, such as Direct debits, Cheques, Withdrawls ect.
☐ **V635 IBeM EMULATOR v1.05** Is a CGA Colour IBM-PC Emulator written to run on any Amiga. Shareware cost US$30.
☐X **V639 RADBENCH PLUS v2.0** Not just an update but a completly new set of utilities & Replacement.
☐X **V640 PAGESTREAM FONT PACK 1** A selection of fonts for use with Pagestream DTP Package **(5)**
☐X **V645 UEDIT v3.00a** Word Processor with learn modes, Online Help, A teach Mode, Split windows, copy & paste, undo & all standard features.
☐X **V646 SID v2.0 FILE MANAGER** Sid can be used for various operations. The best is probably the file copier.
☐X **V647 WORKBENCH HACKS** A selection of Hacks that have been reviewed in CU Amiga.
☐ **V648 TITANICS CRUNCHER v1.0** Cruncher with help & various protect modes includes speed changes.
☐X **V649 WP & SPELL CHECKING** A Collection of utilities to help with your word processing needs. Spellcheckers
☐X **V650 CHECKBOOK ACCOUNT** Will manage your bank account with easy.
☐X **V652 PAGESTREAM FONT PACK 2** A selection of fonts **(5)**
☐X **V657 PC TASK** is a software IBM-PC Emulator. It allows you to run the majority of IBM software with no additional hardware. CGA Colour.
☐X **V659 COMPUTER DIAGNOSTICS v9.1** Is there a problem with your computer! Then what is it.
☐X **V660 HOME MANAGER** This is a great all in one address book with an inventory database & To-do list
☐X **V661 MODELLING : VERTEX** Allows you to create 3d objects without using the X, Y & Z views. Loads Sculpt 3d/4d & Turbo Silver.
☐ **V662 DCOPY v3.0 PRO** You can select the speed of the disk drive, Copy modes, Dos, Nibcopy, Ver & safecopy. Loads of other features.
☐X **V666 MODELLING OBJECTS** Contains over 20 vector objects in Image format. Perfect with Disk V661
☐X **V667 STAR TREK OBJECTS** Contains the USS Reliant, NCC1701D & a ferengi plus a Porsche Car.
☐X **V668 PRODUCTIVITY / BUSINESS** Stock Analysis program. **SUBSTORE** Log Magazines with search scans.
☐X **V669 CELLULAR AUTOMA** This electronic model will allow you to simulate cellular circuits.
☐X **V670 ANDROIDS FONTS 1-7** Self installing font disks for use with DPaint programs (2 Drives Rec, **7** Disks).
☐X **V678 DRAW MAP v4.0 (2)** Will now generate any 16 colour palette with user control, New features include larger maps with national boundaries, improved help & printing. 2Mb. (1Mb version V263, 1.2Mb version V526 (2)).
☐ **V680 DISK OPTIMIZER v1.0** Re-Creates Disks for faster Loading.
☐X **V681 GAME TAMER v2.2** Get a hold of that extra hard game & Cheat with Game Tamer v2.2.
☐X **V682 DEKSID v2.05** Hexa & Ascii Editor for use with your Amiga. Full Program but still Shareware $15
☐ **V683 SUPER LOCK v1.01** Seal your disks / Hard drives for your eye's only. Protects with a Password.
☐X **V684 FONT FARM** A collection of utilities based around the subject fonts. Character Editor v1.0, Font master v1.0, ShowFont v3.3, Set Font
☐X **V685 ASTRO PRO ASTROLOGY** The best Astrology program on the Amiga by far. See Amiga Shopper

☐X **V686 MULTIDOS v1.12** This is another must for people with PC disks. After this program has been installed your Amiga drives can read IBM Disks.
☐X **V688 MAGNETIC PAGES v1.30** This Shareware program will create disk based magazines with graphics.
☐X **V689 WALT DISNEY CLIP ART** A Ppictures from various Disney Films.
☐⊕ **V690 WORKBENCH v2.04 UTILITES (2)** This set contains the programs that should have been with WB 2.0. these powerful utilities take full advantage of the many NEW capabilities that are available in WB2
☐X **V692 RACE RATER v1.6** An excellent program for people who want information about races.
☐X **V696 POST v1.7** An excellent PostScript inter-preter for the Amiga which implements the Adobe language. Requires v39+ & ConMan v1.3
☐X **V698 AGRAPH v2.0** Brings the world a cheap Amiga program to draw Bar, Line, Area & Pie charts, for reports or presentations.
☐X **V700 PERM CHECK (PLUS)**: Is designed to take the chore out of checking plans for winning lines.
☐X **V701 STRATA v1.0** Is a landscape gener-ating program. It allows printing of them from any angle, from any position, & with any magnification.
☐X **V702 EASY RAMOS FOR EASY AMOS** This is the first update for Easy Amos user's. Requires Easy A
☐X **V703 AMOS UPDATER DISK v1.34** This update is a major update to the software, For example, you can now directly update a version of AMOS installed on a hard-disc.
☐X **V704 AMOS COMPILER v1.34** Conatains the second Public Domain AMOS Compiler Update.
☐X **V705 MED v3.21** Excellent update to the famous music program Med.
☐X **V707 SCALEABLE CLIP ART** This is completely new scaleable Clip pictures for Pro Draw
☐X **V710 AREXX TUTORIAL** Includes several sample Arexx scripts & sample progs. Also APIG: Library.
☐X **V711 UNIX** Contains a working demo of Minix, A Unix workalike. Minix is system call campatable.
☐X **V712 PROTEUS BBS** An excellent program for modem & Hard Drive used to start thier own BBS
☐⊕ **V713 COMUGRAPHIC FONTS** Contains 2 clipart style fonts & 4 actual typefaces for use with WB 2.04+ & desktop publishing &/or video projects.
☐X **V714 24-BIT** Contains Rend24 which allows you to proof toaster generated 24-bit anims.
☐X **V715 THE COMPLETE BIBLE** With the entire text of the New Testament & Torah (Old Testament). 1Mb (3)
☐X **V718 SPECTRUM EMULATOR v1.4** Which is NOW!! 3 times faster. Requires a spectrum computer once.
☐X **V719 FREECOPY v1.8** Removes protected games copy protection so that the user can install them on HD.
☐X **V720 DISKPRINT v3.51** A label database which printers & stoes disk labels. combined database & print utility for disks. Works fine with every printer.
☐ **V723 BOOT INTRO CONSTRUCT ION SET** A collection of utilities to create excellent Boot intros.
☐X **V724 PRINTER DRIVERS v4** This is an updated Drivers disk : Canon LPB, Canon Bubble jet's & Star 9 pin.
☐X **V725 THE SUPER KILLERS v2.6: BOOT X v4.50,** This is the best virus killer disk to date kills over 262 virus & may be more, Includes excellent killers. Including **VC v6.06, Zero virus III v1.21 & VT v2.41.**
☐ **V726 COPPER EDITOR v2.0** Enable you to create those nice colour lists found in games like Turrican II
☐X **V727 THE ART OF MED 2** A another excellent select of Med tunes.
☐X **V728 MOBED II** This is a movable object Sprite Editor
☐X **V729 EDIT KEYS** An excellent keyboard editing program.
☐X **V730 ICON MANIA** An excellent selection of Icon clip Art for your WB Disk.
☐X **V731 AMOSBROT v1.1a** This update has even more fractal types which include Logistic Equation, Coast lines & trees see As for reviews
☐⊕ **V732 WORKBENCH v2.04+ UTILITIES 3** DCopy, Boot menu writer, F-Pic, Scenery, Huge, QED.
☐X **V733 SOFTWARE LISTER v1.6** This program is designed to keep a track of your Software collection.
☐X **V734 THE MAIN EVENT v2.0** This autoschedular will execute programs / script files at any given date.
☐X **V735 MEMORY MANAGER v1.1** Select any amount of Chip / fast ram
☐X **V736 THE DESK TOP HARPSICHORD** Instrument simulator Program
☐X **V740 POWERBENCH v1.2** The WorkBench disks with more Power. This 2 disk set has been cruched & Opimized for maxium storage. **(2)**
☐X **V742 ONLINE v1.4** Program will allow you to find cheats within games.
☐⊕ **V743 TERM v2.0** This is the best modem program on the Amiga. recommended if you have Work-Bench v2.04+ & a modem. **(2)**
☐X **V745 THE PROFESSIONAL C MANUAL v3.0** This is the largest collection of documents, examples & utilities in C for the Amiga. It consists of six manuals, with more than 40 chapters, 175 fully excutable examples complete with source codes. Full instructions for C ☐ (12) Uncrunched) & only ☐ (5) crunched
☐X **V757 AMIGADEX v1.61** Creates / converts your Amiga into a card Database system. Very well done.
☐X **V758 TEXTPLUS v4.0e** Another update of this excellent Word processor program Now compatible with TeX The professional typesetting program found in the Fish collection.
☐X **V759 TEXT ENGINE v3.4** Updated version of the Word processor with **AZSPELL**. Excellent spell checker
☐⊕ **V760 BOOTX v5.01** An easy to use boot, file and link virus killer. Has lots of options to detect & kill Amiga Viruses.
☐ **V761 A-GENE v4.18**The latest version of the popular genealogy database program. By Mike Simpson
☐X **V762 BBASE v5.5** Simple database will extra features like fast searches, mailing label support, and best of all it's easy to use. *Max 9 Fields*
☐X **V763 GRAPHIC PRODUCTION** Utilities Collection which contains Scenery v1.0, Landscape, Landbuild v3.2, Cloud 9, Genesis demo.
☐X **V764 AMPP v0.9** An excellent painting package like Dpaint. Amos
☐X **V765 MEGACOLOUR v1.0** A program which transforms a B/w screen into a full colour screen (320*256,64)
☐X **V769 WORD POWER** Is an excellent spell checker / Database
☐X **V770 ACCOUNT MASTER v1.02** Excellent Amos written Account program
☐X **V771 RAINBOWIEN PRO v3.11** Produces coloured Rainbow patterns
☐⊕ **V773 WB v2.04 WINDOWBENCH v2.0** Excellent Workbench replacement for all WB v2.04+ Rom Users **(2)**
☐X **V777 VOICE CLI** The idea is to control the CLI/Shell with your voice
☐X **V778 RAYSHADE v4.0** Complex Ray tracing package.2Mb **(3)**

STAR TREK

☐X **AT05 KLINGON D7 CRUISER** fires torpedoes while passing by. **NCC-1864**
☐X **AT10 ENTERPRICES,** Leaves the Star station dock. **NCC 1701-A,** The classic original Animation.
☐X **AT22 APPROACHING VESSELS,** Animation, Binary Flight Wireframe
☐X **AT23 STAR TREK FLEET MANEUVER** NCC-1940 Fly over & by animation. excellent classic
☐X **AT33 THE PROBE II** Animation. **BRID OF PREY** Anim from Star Trek.
☐X **AT34 LEAVING SPACE OFFICE,** Animation. **DOCKING,** Animation from star trek. **ATTACK MODE,** Bird of Prey Scout hip in attack mode.
☐X **1060 STAR TREK THE NEXT GENERATION,** This game is by Terry A. Mc Intosh. v1.47 *
☐X **1081 THE UTLTIMATE STAR TREK (2)** Game by Tobias Richter. Now with English instructions.
☐X **2222 STAR TREK THE NEXT GENERATION** This is the latest quiz game based on the Next generation **(2)**
☐ **2501 STAR TREK** Game / Jimbo Barber. American version **1Mb & (2)**
☐X **2503 STAR TREK** Game by Eric Gustafson US Inport **1Mb & (3)**
☐X **V367 STAR TREK INFO** A Database of all the original series.

ERIC SCHWARTZ (* = 1Mb)

☐X **981 STEALTHY MANEUVRE II** *
☐X **1085 F-16 SWISS FLYING** *
☐X **1609 NAVY AGRESSOR, SOVIET SOFT LANING, STEALTH BOMBER** *
☐X **1700 ANTI- LEMMINS (2)** 2Mb
☐X **1703 DATING GAME (2)** 3Mb
☐X **1842 SHUTTLE COCK** *
☐X **1850 LATE NIGHT / TERMINAL***
☐X **2013 AGILLITY** *
☐X **2021 VIETNAM CONFLICT** *
☐X **2133 GULF WAR CONFLICT** 2Mb
☐X **2307 AMY AT THE MOVIES II (4)** 1Mb, 2Mb, 3Mb +
☐X **2311 AMY vs WALKER II (2)** 3Mb
☐X **2384 AMY AT THE BEACH (2)** 3Mb
☐X **2427 CAMOURFLAGE** *
☐X **2430 POGO II** 2Mb
☐X **2474 AMYHIST** Introduces Amy the squirrel to your Amiga screens.
☐X **2475 BATMAN & VTOL CONTEST** *
☐X **2476 HOW TO RUN** Into a wall. Very funny Animation by E.Schwartz
☐X **2477 AMYWALKS** Anim of Amy the squirrel Walking. & **AMYJOGS** *
☐X **2478 UNSPORTING** Starring the A10 Thunder bolt aircraft better known as the WarHog. Hunt & Destroy tanks. 2Mb
☐X **2499 ERIC SCHWARTZ TOR** *
☐X **2500 THE SKY DRIVE** *

GAMES

☐ **1073 TETRIS ORIGINAL**This is the closest game to the original tetris
☐X **1420 DTRIS** Best 2 Player Tetris
☐X **1486 SOLITAIRE & SOLITAIRE ROYAL**

☐X **1561 TRITWIS** Contains 1 player, 2 player & 3 Payer game options.
☐X **1735 ASTERIODS** 'THE ORIGINAL' Another old classic. This is the original classic computer game.
☐ **1747 LLAMATRON GAME 2001 By Jeff Minter** Briliant stuff & An excellent production. Shoot to kill
☐X **1749 SCRAMBLE** 'The Original' Remember that old classic game
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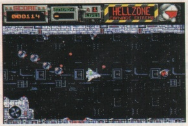


HELLZONE

arcade game

PD shoot 'em ups rarely come up to scratch when pitted against the big commercial releases, but this first game by Australian programmers Interscan is one hell of an exception. The game is stunningly presented with ornate, detailed, richly coloured sprites and a fistful of pick-ups and alien hordes. The horizontally scrolling play-field is densely populated with swarms of enemy space craft and missile spewing gunners are sporadically deployed along the borders of the screen ready to bring down your craft. The game play is nothing new and very close to *R-Type* in style and *St Dragon* in looks. This version has been released as two huge levels with the full version to be shipped out to all those who register with the programming crew. Although both stages are rock hard, once you've become accustomed to the various weapon types found in pods scattered throughout the levels you won't want to stop until you've completed it.

Disk no: G291 (Plus compatible) Available from: NBS 1 Chain Lane, Newport, I.O.W PO33 2QQ Price: £1.75 (including P&P) Tel: 0983 529594

90%

WHAT IS • PUBLIC DOMAIN?

Welcome to the Public Domain where there's a wealth of free software available for your Amiga – often as good as, if not better than, a lot of full-price commercial programs. For the price of a disk and a little money to cover such things as postage and packing, you can take your pick from a stack of great games, utilities, demos, animations and applications.

The origins of Public Domain go back to the early days of computing when groups of enthusiasts would get together and create original programs of their own. These they would distribute freely between friends to garner recognition for their coding skills. Nowadays, the PD scene has grown into a thriving industry with countless PD libraries serving an ever-growing number of enthusiasts. Standards are rising all the time. PD Scene is here to make your purchasing decisions that much easier as we individually rate all the best new releases as well as provide details of the full cost of each disk (including postage and packing) and the address of where to send your cheques/postal orders. Don't just sit there, start writing those cheques now!

WAYNE'S WORLD SLIDESHOW

slideshow

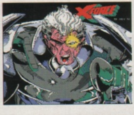
The good news is that the first Wayne's World demos are starting to trickle through. The bad news is that this one's by the same crew that produced last month's tedious Frank Sidebottom show. To be fair I'd guess that the pictures have been grabbed from a pirate video which has resulted in the terrible quality of most of the shots. However, once again, there's no excuse for the appalling track and captions that run throughout. The tedious in house gossip between Zark and other crews scrolls continuously at the bottom of the screen which really distracts your attention from the demo itself. I've nothing against crews keeping in touch with each other, but I've never understood why they can't just pick up a phone or write a letter, surely it would be a lot quicker than sticking all their correspondence on a disk and boring the rest of us to death with their 'in' jokes. Hopefully when the film is officially released on video Wayne's World will get a much better representation on the PD scene, until then we can only hope.

Disk no: 2108 A+B (Plus compatible) 17 Bit, First Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

69%

WAYNE'S WORLD
Pizza Hut
WAYNE'S WORLD

* * *



COMIC BOOK ART

slideshow

A great collection of hand-drawn comic book art from the vast array of super heroes who inhabit the Marvel Universe of gaudily-clad characters. There are 11 classic heroes on show all drawn in Hi-Res and cavorting about in their usual day-glo briefs. There's even a picture of Spiderman whilst he was undergoing his brief costume change back in '89. The black costume he adopted was a pure marketing ploy by the comic's publishers and worked a treat as they sold thousands more issues than before. The first edition in which Spidey traded in his red and blue threads is now quite a valuable piece of pulp and ink. These days the six-foot arachnid alternates between the two outfits on special occasions, depending on the demands of the job. Anyway, these pictures deserve every would-be Marvel artist's attention as they're not bad at all.

Disk no: S584 (Plus compatible) Available from:
NBS 1 Chain Lane, Newport, I.O.W PO33 2QQ
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78%

TOTAL RECALL

demo

This is certainly the best demo of Arnold's amazingly successful film. The TimeCode demo cleverly mixes digitised pictures of the film with sampled speech from the flick and splices them all together with a futuristic sound track wrapped around them for effect. There are surprisingly few stills of Arnie and not one single grab of a bicep in sight, but Sharon Stone keeps the side up by having more stun power than Captain Kirk's light phasers! Quite why the Austrian Oak wanted to pack up his bags and trek all the way to a barren, atmosphereless red planet when he had Miss Stone as his love puppet is beyond me, still he got about eight million dollars as an incentive which goes a long way to negating your natural urges.

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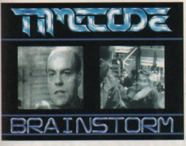
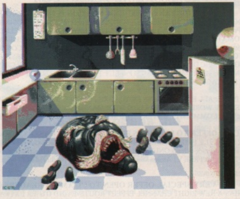
75%



IN THE KITCHEN

demo



Old demo themes exploited in new ways. Some brilliant vectors, mandlebrots and bitmapped bob effects are pulled together in a demo which actually injects new life into the proceedings. The special effects come thick and fast with no breaks for loading and, thankfully, the scrolling text is kept to an absolute minimum. One of Anarchy's best.

Disk no: 2065 (Plus compatible) 17 Bit, First Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

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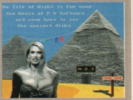
MAGGIE 2: PANCAKE DAY

miscellaneous


The Isle of Wight is for many the Mecca of P.D Software and come here to see the ancient disks

Disks don't come much weirder than this. A huge collection of digitised pictures from all over the TV airwaves have been cut, sliced and generally doctored in a humorous fashion to provide some often hilarious collages. Anneka Rice is revealed to be a bondage queen and Inspector Morse an active member of FAST amongst many others. Some will shock, but most will amuse in one way or another. The collection of 'cut and paste'-type collages are accompanied by some really obscure text that tries its best to be funny, but doesn't quite pull it off. Even so, this is one of the more worth while and original demos to take a look at and it's certain to be more entertaining than most. Get it and see for yourself.

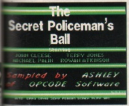
Disk no: S585 (Plus compatible) Available from: NBS 1 Chain Lane, Newport, I.O.W PO33 2QQ Price: £1.75 (including P&P) Tel: 0983 529594

85%

THE SECRET POLICEMAN'S BALL

sample

Here's a classic sound byte from the Ball held at the Royal Albert Hall in 1979 for Amnesty International.



The sample, by Ashley of Opcode, stars four of Monty Python's biggest cheeses: John Cleese, Rowan Atkinson, Terry Jones and Michael Pallin discuss the harshness of rural and urban life back in the good old days when they were knee high to a grasshopper. Each one chips in with a harrowing tale in a bid to out do the other until the whole thing degenerates into a complete farce and the stories become even more far fetched. What makes it even more comical is that it touches a chord in all of us as we've all met or got relatives who like to terrorise us with such stories. Amusing stuff for those who can't afford a video. [Steve Keen currently resides in a cardboard box a the games cuboard in the downstairs loo at CU Towers where he lives with his wife, a vanity mirror and 24 children]

Disk no: M230+M231 (Plus compatible) Available from: Diskovery, 108 The Avenue, Clayton, Bradford, BO14 6SJ Price: £1.25 (including P&P) Tel: 0274 880066

73%

SHAMEN: LOVE SEX INTELLIGENCE

sample

Yes! This is the biz. The new Shamen line-up certainly served up a corker with their recent release and, several months later, here is the PD interpretation. Four Small Custards, using the talents of a man called Zeff, have remixed the Shamen's latest groove and let rip with one of the best disks to ever hit a floppy drive. They've still got a way to go before they can topple the masters, but the sound produced by this stereo mix is among the very best. If you like the Shamen or just dig great sounds then this disk should be an essential purchase.

Disk no: 2062 (Plus compatible) 17 Bit, First Floor Offices, 2/8 Market Street, Wakefield, WF1 1DH Price: £1.50 (including P&P) Tel: 0924 366982

83%

SECTOR ONE

game

With Aliens^3 packin' em in at the pictures, here's a blatant attempt to cash in on the film's popularity and that of Team 17's *Alien Breed* game of last year. This sorry game lifts most of the latters graphics, game-play and even sound, but doesn't do anything particularly good with them. The constant pop of the main mercenary's gun and the awesomely bad sprite detection makes the game a loser from the beginning. Can't someone, somewhere, produce a quality shoot 'em up with AMOS? PLEASE!

Disk no: G293 (Plus compatible) Available from: NBS 1 Chain Lane, Newport, I.O.W PO33 2QQ Price: £1.75 (including P&P) Tel: 0983 529594

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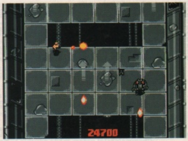

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6043 Alcatraz Megademo 4 (3D) (P)
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6065 Pink Floyd The Wall* (6D)
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PUBLIC DOMAIN PD UTILITIES

Mat Broomfield opens the lid on another Pandora's box of PD produce...

THE LICENCEWARE CONTROVERSY

It seems that every other disk I receive these days is a Licenceware product. Providing the prices are still significantly less than their full priced counterparts (75-90% cheaper), I'll continue to review them in this column.

The explosion in Licenceware has caused a number of PD companies to raise their voices in protest. They claim that it damages the ideal of public domain and shareware software, because the products are once again becoming commercial. Other companies defend their actions saying that by ensuring that the authors of software receive some reward for their work, they are supporting new programmers as they undergo the transition from amateurs to professionals. Furthermore, they assert that because so few authors receive anything like the amount of registration fees they should it's obviously pointless to trust the public to support shareware properly.

Some PD companies who were complaining only a few months ago, have now jumped onto the bandwagon, publishing their own Licenceware products! If you have an opinion, scribble it down and send it into Backchat at the usual address: CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU.

MAP ED

programmer's tool

When creating large background graphics in games, memory limitations can often cause serious problems. 8-bit programmers long ago discovered that one way of overcoming these problems was to construct background 'maps'. These maps are constructed by using a relatively small number of tiles which can be combined in different combinations to create the effect of a single, constantly changing bitmapped background. The trouble is, it can be a time consuming business constructing them.

There have been a number of map editors on the Amiga, but *Map Ed* is certainly the friendliest one I've seen.

The program allows you to load up to three screens full of tiles, with each one containing up to 320 tiles depending on the tile size selected. Four sizes are supported: 16x16, 16x32, 32x16 and 32x32.

Once you've loaded some tiles, you must select a screen size between 5x5 and 999x999 tiles. Once that's done, it's simply a matter of placing the tiles on the grid-marked screen. The program features a full range of cut and paste options, so you can even copy sections of your map to other parts of the screen.

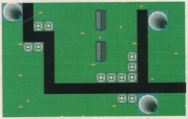
When it comes to saving a map, you can save in three formats: *AMOS*, *Map Ed* and raw. A conversion program is also provided to let you switch between file formats.

Full instructions are provided, and these include comprehensive programmer's notes detailing how to include the maps in your own creations. To complete the user-friendly presentation of this utility, source code and library routines have also been supplied to enable the quick inclusion of maps in any Amiga program.

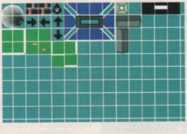
This is one of those utilities that is worth its weight in gold, in spite of its simplicity.

Disk No: Map Ed 1.05. Available from: Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton, S01 6QX. Price: N/A. Compatibility: Any Amiga. Memory: 512k.

78%



If you write games either in C, AMOS or assembler, *Map Ed* will save you lots of work when it comes to coding and constructing playfield and background maps.



SOUNDTRACKER 2.6

music utility

As superb as *OctaMED Pro* is, many programmers still prefer to use *Soundtracker* for writing music because it's relatively straight forward to incorporate its modules in their programs. Unfortunately, until now the program produced modules which were not entirely OS friendly.

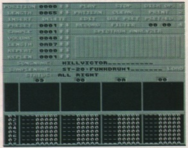
With the release of version 2.6, many of these problems have been ironed out. To recap: *Soundtracker* is the original programmer's music making utility, and it's the one to which all other programs owe their development. It has undergone constant revision since its conception many years ago. Although the program only supports four channel output, this is not a problem as eight channels are too processor intensive to include in a game anyway.

The new version incorporates all the features that have made earlier ones so popular. In addition, it now supports samples up to 128K in length. The program is also 'track oriented', which means that you can now repeat individual tracks in a song, as well as entire blocks. For example, if you've created a song in which the bass repeats constantly, whilst the other parts change from block to block, you needn't redefine it each time, simply tell *Soundtracker* to repeat track 0 ad infinitum. This great feature not only means a major saving in memory, but also in time and effort.

Other new features include: OS legal interrupts, accurate volume equalisers, Workbench support, IFF support, and improved speed commands.

Disk No: 2067. Available from: 17 Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH. Tel: 0924 366982. Price: 1.60. Compatibility: All Amigas. Memory: 512k.

83%



The latest version of Soundtracker is even more memory friendly because each track can be reused as well as just blocks.

MORSE CODE TUTOR

education

There are many occasions when knowing how to use Morse code could be useful and may even save your life. Although many people think of Morse as an abstraction that they tried (and failed) to learn at Scouts or Guides, it's still very much an active and important communication language, especially in the maritime world.

This program is designed to teach you Morse code by repetition, example and quizzes. When you begin, you may specify the range of characters to be included in the session. These can range from full alphabetic, numeric and special characters, to specific groups of numbers or letters. The selection that you make at this stage will be applied to all future options.

If you like, you can also alter the default pitch, speed, spacing and volume of the codes that you will generate or listen to.

The mouse represents a Morse code transmitter, with the left button equalling dots, whilst the

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right takes care of the dashes. Personally, I found the left button a tad too sensitive at times, but other than that, the program works extremely well.

Alternatively, you can use the joystick, or if you own one, you can even plug in a real Morse key.

Morse Tutor

You can choose to receive random characters (from your previously selected range), in which case, the program will beep and bip away until you tell it to shut up (about ten seconds I reckon!). Each time a series of sounds are played, the appropriate character is displayed so that you can learn how the different ones sound.

An easier way of using the program is to turn keyboard sending on. When this mode is activated, each key you press is translated into its appropriate Morse code signal: useful if you need to kid someone that you know what you're doing!

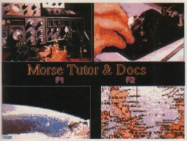
When you've gained sufficient confidence, there are a variety of quizzes for you to pit your skills against, and these are certainly going to help reinforce whatever you may have learned.

The program also includes the option to 'Morsify' any text file that you care to load.

Quite a neat program, although I would have found it even more useful if it had actually printed dots and dashes on the screen as it sounded them. Incidentally, it seems to lock up if you select 'Key Sending', otherwise it's fine.

Disk No: L/101. Available from: Deja Vu Software, 7 Hollingbrook, Beech Hill, Wigan, WN6 7SG. Tel: 0942 495261. Price: 4.49 inc. P&P. Compatibility: Any Amiga. Memory: 1Mb.

70%



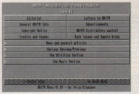
If you need to learn Morse code, this program claims to be the best available on ANY computer.

AM/FM ISSUE 5

music magazine on disk

Making music is one of the most popular 'serious' pursuits engaged in by Amiga owners, as attested to by the vast quantity of software available. Of course, most magazines carry some music sections now, but for many, these small monthly slices are simply not enough. They want reviews, they want utilities, they want song modules and they want samples.

To date, Amiga Musicians Freeware Magazine (AM/FM) is the only dedicated source for such enthusiasts. I took a look at issue 5 to see if it was worth getting excited about, and I must admit, I was very pleasantly surprised.



AM/FM is the only dedicated Amiga musicians magazine. As it's on disk, you can actually try out the programs and tunes for yourself.

The introductory menu system is created by Teijo Kinnunen, the cult programmer responsible for creating *MED* and *OctaMED*, so the mag was off to an auspicious start straight away!

Reading down the menu, the program is arranged very much like a conventional magazine, complete with editorials, reviews, reader's letters etc. Because it's a dedicated mag, it is able to go into far greater detail than ordinary Amiga magazines. It covers everything, from professional MIDI sequencers and instruments, through sampling CDs and hardware, right down to music packages such as *MED* and *Soundtracker*.

Better yet, a selection of songs are included for you to listen to. When you tire of these, you can use some of the utilities provided to have a go for yourself. Issue 5 contains an impressive selection of utilities, including editors for a range of synthesizers, a music writing program, and a realtime oscillator, to name but a few.

If you're seriously interested in music, this is one magazine that you truly can't afford to miss.

Disk No: AM/FM#5. Available from: 17 Bit Software, 1st Floor Offices, 2/8 Market Street, Wakefield, West Yorkshire, WF1 1DH. Tel: 0924 366982. Price: 2.50 inc. P&P. Compatibility: Any Amiga. Memory: 512k.

75%

TOTAL CONCEPT'S ASTRONOMY

education

A couple of months ago, I reviewed a wonderful multimedia product called *TC Dinosaurs* which described the history and development of all things prehistoric.

Astronomy gives you the chance to travel around the universe without even leaving your armchair. Great fun, and educational too!

Now, Total Concepts have turned their attention to the equally mysterious world of deep space, with their *TC Astronomy* program.

This thoroughly entertaining disk delves into the mysteries of binary star systems, black holes and zero-g (cheap plug) with absolute abandon! The program's author, C.Hill, hasn't felt the need to try and cram it full of boring technical information or astronomical physics and maths, he simply restricts himself to presenting the fun bits. Sure he talks about sidereal time and red shift, solar winds and perihelions, but it's not turned into a science lesson, rather the subject is presented as a relaxing amble 'round the galaxy, with text and pictures to illustrate the point.

On the subject of pictures, Mr. Hill has obviously mastered his digitiser now, because the quality of screens is absolutely first class.

The entire thing has been put together using Gold Disk's *Hyperbook Browser*, and that means that it's all mouse controlled. Mr. Hill has now added an alphabetic glossary of terms which you can use to find any astronomical expression, before jumping straight to it by clicking its name. Unfortunately, the picture menu has now been discarded which is a shame, but I suppose its absence does provide you with additional incentive to read the text all the way through.

Disk No: PE010. Available from: Valley PD, PO Box 15, Peterlee, Co. Durham, SR8 1NZ. Tel: 091 5871195. Price: £1.25 inc.P&P. Compatibility: Any Amiga. Memory: 512k.

87%

DISK IMPLODER (DIMP)

disk compression utility

If you have a modem, and ever need to retain the exact structure of a disk whilst sending it to someone, *DIMP* is the solution.

It works in much the same way as file archivers like *LHA* and *Zip*. However, instead of compressing files, it's used to compress and store individual disk cylinders. In general use, this would mean simply compressing all the cylinders on a floppy disk, but if you need to, you can specify which ones are to be compressed (useful if you just want to transfer the bootblocks of a disk).

The program features multiple compression levels, and if you like, you can specify that the compressed file will be stored as a self extracting executable object. This means that when the program is executed, it will automatically decompress and write itself back to a blank disk exactly as it was before you compressed it.

The program runs from CLI and is very simple to use, considerably easier than the archivers to which it's related. This is primarily because most of the options used by archivers to retain file and directory structures are redundant when dealing with cylinders instead of files.

The program claims that it can be used to compress a subselection of cylinders from any floppy compatible device, and I don't know if that includes hard drives, but I didn't want to try.

A very useful utility, which can save the recipient of your files a great deal of time reconstructing any disks that you send.

Disk No: U640. Available from: NBS, 1 Chain Lane, Newport, Isle of Wight, PO30 5QA. Tel: 0983 529594. Price: 1.75 inc. P&P. Compatibility: Any Amiga. Memory: 512k.

77%

FRAC 2.0

adventure creator

I was recently very impressed by the release of a commercial adventure game creation system called Visionary. Little did I know, that such a program already existed in the form of *FRAC1.1*. Version 2.0 has now been released, and it really is quite an impressive piece of software, doing for adventure games, what *AMOS* does for arcades. Although they have waned in popularity since their hay day in the mid to late eighties, many people still find type-in adventures to be by far the most stimulating type of game available. The challenge posed by the devious mind of the programmer, offers a level of stimulation not possible with any other type of game, although RPGs come very close.

Why pay 40 or 50 pounds for commercial adventure construction kits when FRAC gives all the tools you need?

Now, for a fraction of the price of *Visionary*, you too can torment innocent games players with adventures of your very own! Like *AMOS*, *FRAC* is an entire programming language, based loosely on a hybrid of C and Basic. It has a huge number of commands uniquely geared towards interpreting the player's instructions and responding to them, both textually and with effects such as graphics and music. *FRAC* comes with a monstrous 189K manual, that will need to be printed if it's going to be of any practical use, so say goodbye to a couple of hundred sheets of paper straight away!

The manual is written in perfectly lucid, and sometimes amusing English, although it has a tendency to ramble far beyond the scope of the subject at hand. I think that this is because it author is trying to cater for absolute beginners who have never even seen an adventure game before. This is a mistake, because it's very dubious whether such people would even have an interest in the program.

To be honest, the program was far too vast for me to learn inside out before writing this piece, but it seems to be very comprehensive. It includes a parser section that looks as if it can interpret even the most complex of sentences, including prepositions, plurals, and contractions. The program can play modules created with *MED*, *OctaMED*, *Protracker* and *Game Music Creator* (GMC). It can also display standard and Power Packed animations and IFF screens. If you want to do more than simply play other people's adventures, *FRAC* 2.0 could be the answer. It'll take you a fair amount of time to create your own games, but if you take the trouble, there's no reason why you can't create commercial quality programs.

Disk No: FRAC 2.0. Available from: Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton, S01 6QX. Price: N/A. Compatibility: Any Amiga. Memory: 1MB.

90%

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PG009 ASI 2 Four classic games ! Get it +
PG010 ASI 3 Megaball & Drip Superb !+
PG011 ASI 4 Frogger & more games +
PG012 ASI 5 Raid, Go Looly & Retaliator+
PG013 ASI 6 Pacman & 4 more - cool !
PG014 ASI 7 Moonbase, Trix, Mightworks
PG015 ASI 8 Airace2, Hball, + more !+
PG016 ASI 9 Battle pong & Blizzard +
PG017 ASI 10 Escape, Pipeline, Pickout+
PG018 ASI 11 Dad, Connex,Reversi+Trippin+
PG019 ASI 12 Llamatron, Car, Powerpong
PG020 ASI 13 Twintris + more good games
PG021 ATIC ATAC Really playable ! +
PG023 BATTLEFORCE strategy war game
PG024 BLACKJACK Good card game !+
PG026 CASTLE OF DOOM Excellent! Get it +
PG028 COLOSSUS & WORLD Fab adventures !+
PG029 CROSSWORD COMPILER As it says !+
PG032 DRAGONS CAVE D&D style game Mega+
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PG046 HACK Great text adventure-infocom style! +
PG048 HOLY GRAIL One of the best Text adventures+
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PG064 NAPOLEONIC WAR SIMULATOR strategy game!
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PG066/67 NETHACK D&D Adventure needs 2 drives
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PG069 NU GAME Mega Shoot em up with good graphics
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PG071 POM POM GUNNER Like beach-head on the 64+
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PG081 SERENE II Follow up to the above game +
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PG147 QUADRIX Excellent puzzle game +
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PG151 FLAG CATCHER Avoid the bombs !!
PG152 TETREN A very nice Tetris clone
PG153 WAR very good strategy/arcade game+
PG154 NUMPTY & ALIEN INVADERS Manic miner game!
PG155 ASI GAMES 21 Zeus Tettrix & more +
PG156 ASI GAMES 22 Lemmingoids,Wizzys quest Duel etc+
PG157 ASI GAMES 23 Quick money,BIP,Interferon Arcadia+
PG158 PORK A PORK Pop the balloons & stop the foxes+
PG160 ENTERTAINMENT+ 1 Klondyke Hball & more+
PG161 ENTERTAINMENT+ 2 Zerg BounceNbob Frogger +
PG162 ENTERTAINMENT+ 3 spacewars, squamble & more
PG163 ENTERTAINMENT+ 4 Zon Hanoi Yelp & more +
PG164 GAME TAMER 2.3 joystick tester & 268 cheats+
PG165 SOLID SQUAD Nice little sriving game
PG166 RAID III Wicked new shootemup !!!! +
PG167 SERENE III From the author of Raid !!!+
PG168 WHATSITSNAME Great new puzzle game just in

EDUCATION

PE001/5 EDUCATION SET science programs for ages 11+ +
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PE011 TOTAL CONCEPTS DINOSAURS Book on a disk+
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PE018 TYPING TUTOR, Superspell Budget & Mscalender! +
PE019 DUNKS DTP A sort of DeskTopPublisher for kids +

BUSINESS

PB001 AMICASH bank management program+
PB002/3 ANALYTICALC Superb spreadsheet!+ (2)
PB004 ASI LABEL PRINTERS 3 of the best+
PB005 BANKIN control your cheque book! +
PB006 BUSINESS CARD MAKER Nice program+
PB007 CLERK Complete accounts package+
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PB010 JOURNAL Keep track of finances
PB011 MISC.BUSINESS Geotime, Grocery list, Calc
PB012 QBASE Simple 8 field database
PB013 QED Simple & effective text ed+
PB014 RIM DATABASE Fully relational !!+
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PB016 UEDIT ISSUE 3 NEW VERSION Text Editor+
PB017 VISICALC SPREADSHEET Simple to use+
PB019 BUSINESS LETTERS contracts, letters + more+
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PB021 AMIBASE PRO. Powerful easy to use Dbase +
PB022 BBASE II A fast & easy to use database+
PB023 FORMS REALLY UNLIMITED form creation prog+
PB024 LAST WILL & TESTAMENTS Just in case !+
PB025 EDWORD Brand new wordpro - V.good +
PB026 AGRAPH Superb Program graphing data +
PB027 BOILERPLATE Business letters & Wordpro +

UTILITIES

PU002 A-GENE Good geneology program +
PU003 A68K 68000 Assember program
PU004a/b A64 EMULATOR NEW VERSION 2.0 (2)
PU005 AMATEUR RADIO 1 Interest to radio hams +
PU006 ANIMATED POINTER PACK Moving pointers!
PU012 ASI GRAFFIX UTILS graphics convertors etc+
PU013 ASI BOOT UTILITIES bootblock utilities +
PU015 BIORYTHMS, STARCHART 2 Good programs+
PU017/20 C MANUAL II (4) Learn to program !!!
PU021 C-LIGHT RAY TRACER Good program+
PU022 CHEMESTHETICS molecule displayer +
PU036 CURSER BASIC COMPILER Just what you need!+
PU037 D-COPY The best PD disk copier +
PU039 DBW The foreunner to Skulpt 3D !!! +
PU040 DEMOLISHER 168 UTILTIES - MEGA !+
PU041/43 DESKBENCH alternative workbench (3)
PU045 DIRECT ACTION Edit animation sequences etc.
PU047 DOPE INTROMAKER Make your own intros
PU048 DYNAMITE FONTS II CutNPaste fontscreens
PU049 DYNAMITE FONTS More CutNPaste Fonts
PU055 ELECTROCAD DEMO circuit designer +
PU056 EXILE FONTS Excellent CnP fonts+
PU058 FONTS AND RAM MANAGER BIG video fonts+
PU059 FONTS & SURFACES Backdrops & fonts+
PU061 GENESIS DEMO fractal generator really good!
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PU064 HARDDRIVE UTILS MRBackup & FixDisk & more +
PU065 ICONMANIA Program icons & more !+
PU066 ICONS Cramm packed with icons !+
PU067 IMPLODER V4.0 Megacrunching Util+
PU069 JAZZBENCH Alternative Wb for 1.2/3 users
PU071 JR COMM 1.02 Modem users comms package
PU072 METALLION UTILS Font Editors & more utils+
PU073/76 KING JAMES BIBLE Old&New testaments (4)+
PU077 LANGUAGES DISK Forth, Modula 2, X-Lisp Logo+
PU078 M-CAD Hires design package. Excellent +
PU079 MACVIEW,DRAW,ROTATE 3 unusual progs.Good!
PU080 MESSY-SID Read/Write PC Files, Brilliant!+
PU083 MORSE PROGRAMS for the radio hams.
PU086/7 NORTH C 1.3 (2) Complete C compiler & libs+
PU089 PASCAL COMPILER needs a good CLI knowledge+
PU091 PENDLE 200 MEGAUTILS An essential collection+
PU095 PRINTER DRIVER GENERATOR new drivers+
PU096 PRINTER DRIVER UTILITIES Various utils etc.
PU097 PRINT STUDIO V1.25 Prints pics & text etc.+
PU101 QUICKBENCH Instant WB uses RAD: very clever!
PU102 RAZOR 1911 Excellent collection of utilities
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PU174 ASTRO 22 professional astrology program! +
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PU182 STOCK ANALYST Technical analysis program+
PU183 AMYGEN Excellent geneology program+
PU184 PROCALC V1.0 professional calculator!
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PU189 TRONIK VIRUS KILLERS 21 virus killers & docs+
PU190 BENCHWORK 1.0 workbench alternative
PU191 LANDBUILDER fractal land generator+
PU192 SID 2 Get this ! directory util !!! MEGA!+
PU193 PLUS 8 Mandelvroom showiz arq addmenu
PU194 PLUS 9 Mouseblanker Nuke Back&front
PU195 PLUS 10 Popup Filesearch Dcopy2 Fblank
PU196 PLUS 11 Lablemaker Calckey Multiinstall
PU197 MOBED 2 Dpaint for Sprites & bobs+
PU198 VIDEO WIPES Masks & fades Dpaint 3/4 +
PU199 TDM SLIDESHOW GENERATOR wipe/fade pics
PU200 LITTLEBENCH 1.3 Now for 1.3 owners !!
PU201 MALICE FONTS Excellent tiny fonts for Dpaint+
PU202 CYCLOPS Weird Plasma/fractal creator ! +
PU203 SCOPE 184 utils & clips for Ppage
PU204 GATOR GRAPHICS Dpaint Tutorial disk+
PU205 PC TASK Wicked PC Emulator Get it !!! +
PU206 MSDOS PROGS PC Shareware Progs for PCTask +
PU207 MULTISID Combines SID2 & Multidos(PC>AMIGA)
PU208 ASI HANDYTOOLS 3 A mega compilation of utils

ANIMATIONS

PA033 BUSY BEE Cute animation of a freaky bee
PA036 CX1 SPACESHIP Excellent RT anim +
PA039 ERIC-S AMY VS WALKER Cute & sexy! 1.5M
PA040 ERIC-S BATMAN vs JOKER Very funny!!!+
PA041 ERIC-S COTOTE 2 A corker!! 2M
PA043 ERIC-S MORE AEROTOONS Very witty !!!+
PA044 ERIC-S SHUTTLECOCK plays with satalite.
PA045 ERIC-S STEALTHY II Mig-29 vs Stealthy !+
PA046 FRANKLYN THE FLY Day in the life of a fly! +
PA048 GYMNAST ANIM Gymnast swings on bars! +
PA053/4 LIGHT CYCLES (2) Tron animation+
PA056 MAGICIAN II Good RT animation+
PA059 MR POTATO HEAD Potato man in cabaret! +
PA060 NEWTONS CRADLE RT animation +
PA064 PROBE SEQUENCE Alien life probe? +
PA065/68 REAL 3D (4) Superb of the program+
PA072 THE JUGGLER A classic amiga demo!+
PA074 THE WALKER vs The Helicopter - Mega !+
PA075 THE WALKER vs A2000 A classic ! +
PA077 UNICYCLE ANIM Super anim of unicycle & car! +
PA079 MR POTATO HEAD 2 Another fab Chris Hill anim! +
PA080 LEMMINGS ANIMATION Very funny indeed
PA082 TIN TOY ANIMATION Ray traced tin soldier! +
PA083 MORE CLASSY ANIMS The Bionic Bimbo !+
PA084 JAMES POND v LEMMINGS I like it !!!
PA085 JET ANIMATION Fractal Flight but better! +
PA086 FRACTAL ANIMATION full screen low flying anim! +
PA087 TEA POT ANIMATION Very good RT anim
PA088/9 MR POTATO HEAD:The circus act!!! (2)
PA090 TOO MUCH 3D Ship flys out of monitor!! +

AGATRON

We stock the full agatron range here's the best:
AGA21 ENTERPRISE Docking with Space station+
AGA22 ENTERPRISE APPROCHING Very good indeed +
AGA23 FLEET MANOEVRE Stunning ! 1m +
AGA24 KULI PEN animation & ping pong. Great 1M +
AGA25 THE RUN A superb car chase 1mg or over. 1M +
AGA26 SHIP ROCKING & enterprise leaves dock. 1m +
AGA28 SHUTTLE & ENTERPRISE Fabulous ! 1M +
AGA31 PORCHE car rising from a table, superb 1M +
AGA36 BIRD OF PREY an excellent animation 1m +
AGA37 TOBIAS GOES KNACKERS-Check this out! 1m+

POWERANIMS

PP001/2 ANTI LEMMINGS (2) This is Brilliant! 2M
PP003 AT THE MOVIES Cute anim of Amy squirrel 1.5M
PP004/7 AUTOMATED LIGHT (4) Battlestar galactica! 3M
PP008/10 BUZZED (3) Great anim of wasp crashing! 2M
PP011/12 DATING GAME (2) Very witty!, Get it. 3.5M!
PP016 GULF WAR Another ES production! Good 2M!
PP017 JUGGLER II Juggler meets Ms Juggler! Fab! 1.5M
PP018/20 LOST IN SPACE (3) From the TV series 2M
PP021/24 LANDING (4) Tobias Richter poweranim 4M!
PP025/27 STATION AT KHARN (3) Incredible 2M demo
PP028/33 UPGRADE (6) Massive 5 mg animation!!
PP 034/5 VAUX KILLERS (2) An old but good anim 2M!
PP036/7 WALKER DEMO (2) A 2mg version of a classic
PP038/9 WAVE SAILING (2) Nice anim of wave sailor 1.5M
PP040/43 AT THE MOVIES II (4) Hilarious ! 1mg>3mg
PP044/45 AMY V WALKER II (2) Another witty ES demo 3M
PP046 SWEET REVENGE Coyote vs Roadrunner ! 1.5mg+
PP047 GOTTA GO Crazy dog walks his master? 1.5mg +
PP048/9 A DAY AT THE BEACH Stunning ! 2 Mg
PP050 UNSPORTING Wicked aerotoon from Schwartz+ 2M

DEMOS

PD016 BUDBRAIN II Hilarious megademo !
PD018 CHAOS ROCK Fab light show with fractals! +
PD020 CRIONICS MEGADEMO maddona demo & more
PD021 CRIONICS NEVERWHERE Real world demo
PD033 DEVILS NO REALITY multipart demo !+
PD046 IRAQ DEMO Amusing demo with Saddam
PD068 PHENOMENA ENIGMA Absolutely briliant! +
PD069 PHENOMENA JOYRIDE Very good demo !
PD076 PLASMUTEX Good plasma & great music +
PD077 PMC ALPHA OMEGA Superb vector demo+
PD078 PUGGS IN SPACE Witty cartoon demo
PD094 SCOOPEX MENTAL HANGOVER A classic+
PD097 SILENTS GLOBAL TRASH Incredible!!+
PD098 SILENTS ICE Brilliant Fx & music!
PD108 TOMSOFT TRIP TO MARS 3D trip to mars!
PD109 TOMSOFT VIRTUAL WORLDS An absolute Epic !
PD113 VANGELIS DEMO Fab music & color cycling! +
PD119 REBELS OUTLAND Good demo fron them !
PD123 IB MANGA Nice Japanese style cartoons!
PD124 ANDROMEDA DECAYING PARADISE Good! +
PD125 RAY OF HOPE 2 Great ! good music & graphics!
PD129 RAZOR 1911 VOYAGE Very good fx and music
PD130/34 ALCATRAZ ODDESSY Awesome !!! Get this !!!
PD135/6 CRIONICS HARDWIRED Very impressive demo!!!
PD138 SEEING IS BELIEVING Excellent demo & music
PD141 WILDFIRE MEGADEMO great House & dance music
PD143 CAT Silents & Crionics demo for cat club +
PD145 NECRONOMIA Excellent demo, if bit freaky ! +
PD146 DOS Excellent vectors & music demo +
PD147 HARDCORE Anarchy's cool new demo
PD148 CHAMELEON A new vector world demo,
PD149 MAGNETIC DREAMS Excellent new demo
PD150 TSL PARTY WINNERS Music & gfx - Superb
PD151 TERMINATOR 3 Interesting ripoff of the movie
PD152 HUMAN TARGET Wicked Rave/vector demo Get it!
PD153 DEFORMATION with the men from the MTV demo
PD154 GET FROGGED You'll love this, just get it !!
PD155 MULTICA Wicked demo from andromeda Get it !!!
PD156/7 REAL EMPATHY Good Demo & Fab game inc. !
PD158 DIGITAL PUNISHER Very good BlitterZoom Fx

MUSIC DISKS

PM010 AMEGA PARTY WINNERS Four WICKED songs+
PM012 AMIGADEUS CLASSICAL Eine Kleiner etc. +
PM014 BANGING RAVES kickin remix of house
PM016 BEATLES SONIX Nice music +
PM019 BRUNO's MUSIC BOX II Superb jazz funk music +
PM020/21 BRUNOS MUSIC BOX III Jazzfunk. Get it ! +
PM022/23 CLASSICAL MUSIC Bach, Handel etc +
PM030/34 DIGITAL CONCERTs 2-6 Excellent house/
PM059 MANIACS OF NOISE This is brilliant!+
PM067 POPEYE MEETS BEACHBOYS Hilarious! +
PM069 RAZOR FACE ANOTHER DAY very good !!!
PM070 RHAPSODY IN BLUE tracked by Rob Baxter!
PM071/72 SILENTS BLUES HOUSE (2) Music & game+
PM074 SOUND OF SILENTS Jut get this its mega!
PM079 TECHNOTRONIX REMIX Good remixes etc.
PM082a/82b VIVALDI - FOUR SEASONS (2) V.Good !+
PM087/88 HIS MASTERS NOISE by Mahoney & Kaktus
PM090/91 MOZART HORN CONCERTO'S 4 by H.Gan
PM092 PIANO TUNES Nine piano songs- good +
PM096 STAIRWAY TO HEAVEN Rendition of the song+
PM100/103 MANIC RAVES II Fantastic rave stuff !
PM104 500 THINGS COMEBACK 4 great rave type trac
PM105/6 KEFRENS MEGAMIX Fabulous dance music+
PM112 TECHOMANIA II 8 essential hardcore tunes+
PM113 PROTON GATES OF TIME 6 good pieces of mu
PM114 UPROAR SPLIT BEAVER MIX rave megamix +
PM115a/b CHROME Brilliant music disks !+
PM116 LIONS GREATEST SHOW ON EARTH Very goo
PM117 MUZAK OF THE WORLD original Amiga music! +
PM118 TSP RIPPED MUSIC 1 Some good tracks+
PM119 TSP RIPPED MUSIC 2 MOre of above+
PM120 IDEAL MODE AEROSOL EP Go raving mad +
PM121 NIGHTBREED MUSIC DEMO 8 Rave music dem
PM122/4 PLAYSID 2 (3) You must get this !!!!! +
PM125 PLAYSID inc.RobHubbard, ManiacsOfNoise +
PM126/9 LSD MUSIC PACK (4)A Excellent music collect
PM130/2 BACH BRANDENBURG CONCERTOS 1 to 6 +
PM133 DANCE TRANCE Rave tracks played amiga style
PM134/5 SOUNDS OF SCIENCE (2) Absolutely Brilliant+
PM136 WICKED HOUSE Superb rave music by origin.
PM137 KEFRENS MEGAMIX II Very good !! dance music +
PM138 EROTICA 6 Mega music ! inc crocketts theme ! +
PM139/40 SPRING MELODIES (2) 9 tracks fron anarchy
PM141 HARDLINE MUSIC 7 groovy synth-style tracks +
PM142 FRACTAL MUSIC Very well presented !! get it!
PM143 FALCONS MUSICBOX 2 Average music disk+

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PS002 ADVANCE HAM Really stunning !+
PS008 AIRCRAFT SLIDE Pics of fighter aircraft! +
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PS014/15 BUTTERFLIES (2) High quality !+
PS019 COLOURCYCLES Neat fx ! +
PS025/26 DIVINE VISIONS (2) Mythological+
PS030 FRAXION FUTURE VISION fantasy pics+
PS033 GERMAN RAY TRACE Superb See these !+
PS069/70 SILENTS/CH 42 (2) This is superb!+
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PS087 ALTERED DECEPTIONS Chris hills super work+
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PS091/2 FRACTAL MOUNTAINS Excellent stuff!+
PS093 VANISH 3D Awesome 3d ray traced +
PS094 INVISIBLE WORLD II Yuk Bedbugs And more !+
PS095 TOTAL CONCEPTS SLIDE Pics of forthcoming C
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PT037 PROTRACKER 2.0 The bees Knees !!!
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APD293 GRAND PRIX SIMULATON Very popular
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SECTOR 1 A nice game similar to alien breed +
STRIKEBALL Baseball type game done in Amos +
ETHOS Simple graphical adventue Sinbad style +
CATACOOMBS A great D&D style game. VG.GFX +
FATAL MISSION Very good Shootemup game +
ARAZMAX Similar to the game microbes. Good +
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PM144 BOUNCER Remix of the song by Kicks like a mule!
PM145 PARADISE TECHNO POWER Great techno music !
PM146/7 ROLLING Good music on a false workbench!!! (2)
PM148/9 DRUMS & REVERB Exellent synth type music!! (2)
PM150 DESKTOP HARPSICHORD RECITAL Classics! +
PM151 INTENSE RAVE VISION A very good rave music !!
PM152 PARADISE: NO BRAIN NO PAIN Good for ravers!! +
PM153 BIZE: KILL DA BABE 6 tracks of rave music!! +
PM154 PULSE Yes, pulsating rave music again!! +
PM155 VINE G-RAVE 5 more good rave tracks!!! +
PM156 VIOLENCE PHONOBOMB Four good tracks +

NEW DEMOS

PD159 ANARCHY IN THE KITCHEN Some good FX Fab!+
PD160 ANDROMEDA POINT BLANK Crazy polygon effects
PD161 BRONX MEGADEMO II Several sections to this!
PD162 ALCHEMY MARCHWITH Very good new demo+
PD163 GUARDIAN DRAGON 2 NEW demo from Kefrens
PD164 DESIRE MENACE Good Psycho rave demo +
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PD166 PALACE LINUS Like the 7Up Ad on TV +
PD167 ANALOG FALLEN Excellent demo +
PD168 MELON DEZIGN 808 A classy new demo
PD169 BIG BANG Excellent spacey-type demo+
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POW013 **STARGOOSE+** Excellent ShootEmUp
POW014 **STAR RAY** Defender clone - Get it !
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POW016 **DEMOLITION** Average Breakout game
POW017 **DOGS OF WAR+** IkariWarriors type - good!
POW018 **HATE+** Isometric 3D ShootEmUp - Great!
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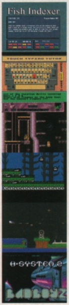
CLU01 VIDEO TITLER is a program that will allow you to create smooth scrolling video titles with the greatest of ease, programmed by Darren Mccaul, whose Starbase is due out soon, the program lets you use any amiga bitmap font, of which several are supplied, and scroll in any colour vertically up the screen. Essential for all video enthusiasts. £3.50 +



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CLU03 TYPING TUTOR A program here now for all you budding office clerks, learning to type can be a real pain, lessons cost a fortune, but not when you have an amiga ! This program will take you step by step through a full typing course, showing where to place your fingers and lots more. Before long you'll be able to type as fast as I can ! Price £3.50 +

CLG01 NORRIS A machine code programmed platform adventure starring Norris, help him journey his way through level after level battling beastly beasts and montstrous medieval men ! This game has a great atmosphere, and is immensley playable, it will have you addicted in minutes !
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CLG02 DARK THINGS Another excellent quality platform game along similar lines to MarioLand, you know - scrolly along, then run & jump kind of thing, so your kids will love it, we did, and we're just a bunch of of kids at heart ! Price £3.50 +

CLG03 PHASE 2 Superb sideways scrolling shoot em up, along similar lines to the all time classic defender, anyway you control a photon powered XZ-1B fighter and you must battle with the forces of evil ! The gameplay is brilliant and the scrolling and animation silky smooth, if you want my advice - buy it. Price £3.50 +

CLG04 X-SYSTEM This is a corker a superb multilevel shootemup, you know the type, balst your way through hoard after hoard of aliens and end of level guardians, it even has a built in platform game thrown into he bargain, programmed by the BadBoyz this is one of the best shootemups about, get it and prepare to be impressed. price £3.50 +

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OBLITERATION
WILLYS WATERWORKS

CLG05 TRUCKIN ON This is a new version of a PD game that was originally bugged to hell, the programmer has taken all the main elements of the game and re-programmed it in C, so its now fully playable truck driving simulation and management program. TO is a must for all you truckers out there and is supplied on 2 disks & needs 2 drives! 4.50.

CLG06 OBLITERATION This game has had many a rave review, programmed in machine coed its fast & furious arcade action as you work your way thru this asteroid infested game, blasting wave after wave of rocks, this game is utterly addictive and includes a bonus game MAD BOMBER which is as addictive as the main game. A must for all gamers ! Price £3.50

CLG07 WILLYS WATER WORKS If its puzzle games you like then we've got just what you want, you control willy, a plumber, whose job it is to built a pipeline using the pipes he has before the water starts to flow, and this certainly isnt as easy as it sounds ! A superb little game that will have you and you kids(?) entertained for hours. £3.50

CLG08 DRAGON TILES This is an excellent puzzle game you have a huge stack of different icons which, using the mouse you must match up to make a level disappear, sounds boring but its actually very addictive, I was playing it for hours ! A Vast improvement on the PD version, Dragon tiles is well worth anyones couple of quid ! Price £3.50 +

CLG09 MOTOR DUEL Now this is just fabulous ! Martin would not leave this game alone for days, its a 3D car racing-chasing-shooting game, with guided missles and lasers, its by the same programmer as the PD game Battlecars, but its a lot better, play the computer (Mega difficult) or link up to anoth amiga for 1 on 1 action ! Price £3.50 +

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D021	ALPHA OMEGA+ just brillia
D022	VOYAGE+ superb effects
D023	INDIANAPOLIS 500+ racing de
D024/28	ODYSSEY 1M (5)+ Excellen

GAMES

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G030	RING WAR+
G031	MATHS ADVENTURE+
G032	PARAGON & ROTHELLO+
G036/37	LEARN & PLAY (2)+
G038	DIPLOMACY+
G039/40	C64 GAMES (2) needs U0
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THE ONLY AMIGA GUIDE WORTH READING. . . .

blue pages

contents...

This month's Blues Pages are positively stuffed with useful information, features and tutorials to help you get the most out of your Amiga. If you're serious about using the Amiga, then the next 32 pages have been specifically written with you in mind. Whether it's book reviews, music tutorials, or a problem you want answered, the Blues Pages have a section for you.

149 BOOKSHELF With the Festive season fast approaching, no doubt you'll be thinking of treating yourself or a friend to one of the hundreds of Amiga-related books that inhabit your local friendly neighbourhood book store. If so, then read the first of an on-going series of buyer's guides aimed at the committed bookworm! Over the coming months we'll be reviewing practically every book on the market, from player's guides for all the latest games to hard-bound technical manuals the size of telephone books (and just as interesting).

152 AMIGA WORLD In a change of focus, Mike Gerrard takes alook at the wonderful and wacky world of the Amiga. Each month, Mike will be taking a look at some of the more unusual uses that the Amiga is being put to. This month, he examines a new program that's been developed to train police forces in crowd control techniques. Set at a fictitious football ground, *Vistrain* helps the police train their officers to handle any emergency, from marauding soccer hooligans to a major fire at a stadium.

155 INSIDE INFORMATION If you're looking for the inside info on all the latest games and want to keep abreast of the most up-to-date industry gossip, then you've come to the right place. For starters, we've got the top twenty full-price and budget charts as well as a run down of the team's current favourite games. And if you want to know what was happening one, two or three years ago in the crazy world of computer gaming, then we take a stroll down memory lane.

156 COMMS Owning a modem can open up a huge global network of bulletin boards, free software and Amiga-specific conferences. Not only that, but you are also instantly in touch with thousands of like-minded individuals and, no matter what your interests, there'll be someone, somewhere who shares them. Your guide through the electronic airwaves, Dave Burns, is here once more to offer invaluable advice about the burgeoning comms scene.

158 BACKCHAT If you've a problem, a question, a gripe or a moan, then this is the place where YOU get to have YOUR say about anything to do with the Amiga. So, if you want to join in any of the lively debates, pick up a pen and paper, and get scribbling.

162 CLUB CALL If you want to get in touch with a computer club near you, then this is the place to look. Each month we take a look at a number of different Amiga clubs covering the length and breadth of the country. From games clubs to programming groups, there's bound to be one that will appeal. For the cost of a second class stamp and envelope, you could be put in touch with hundreds of fellow users in your area. And remember, if you run a club, here's the place to garner some valuable free publicity for your user group.

166 QUESTIONS AND ANSWERS By day he's a mild-mannered technical adviser for a top Amiga magazine, but when he dons his famous blue pokka dot boxer shorts he's magically transformed into – tada – Mat Broomfield, the man who's got an answer to all your technical queries. Whatever the problem, Mat's on hand to offer advice and information to help you out.

171 OCTAMED PROFESSIONAL Part four of our comprehensive *Octamed Professional* tutorial finds Mat Broomfield probing the inner most workings of this superb music program. This month Mat takes a look at traditional notation and sheet music and explains how you can enter your favourite pop songs in no time at all.

174 MUSIC CU Amiga's musical maestro, Tony Horgan, is here once again to share with you his top tips for making beautiful music on the Amiga. This month, our Tone takes a look at how to jazz up samples with some realtime effects and how to add some reverb or echo. Take it away...

177 NEXT MONTH The page that nobody believes and can you blame them? Next Month gets written six whole weeks before the magazine goes on sale and it really is a case of the Ed making it up as he goes along. [No I don't – Ed] Yes you bloody well do! And to prove it, just turn to page 177, wait 30 days and just see if I'm right!

178 POINTS OF VIEW The man behind such hit games as *IK+*, *Jimmy White's Whirlwind Snooker* and *3D Pool*, the one and only Archer Maclean gets all worked up about where the next generation of computer games coders are going to come from. Is the console boom going to stop people from learning how to program?

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LPD	45	MUSIC BOX - Music tutor for age 7+ (1 MB) (P)
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LPD	47	DIRTY CASH - the best Fruit machine (1 MB) (P)
LPD	50	MAGPIE CLIPART 2 - more original pictures! (! MB) (P)
LPD	51	MAGICAL YOUNG ARTIST - Super colouring book for youngsters, over 30 pictures ! (P)
LPD	52	LC24 FONTS DISK (P)
LPD	53	MAGPIE CLIPART 3 (P)
LPD	54	MAGPIE CLIPART 4 (P)
LPD	57	KIDS CLIPART 1 - Lots of line-drawn images (P)
LPD	59	PREHISTORIC FUN PACK - Dinosaur games and puzzles - recommended (1 MB) (P)
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LPD	71	BATTLE CARS - Racing game -commerical quality - highly recommended (1 MB) (P)
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LPD	77	POWERBASE v2.1 - Very professional (1 MB) (P)
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LPD	85	MAGIC WASSOCKS - Amusing platform game (1 MB) (P)

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PDU	103	Icon Maker (P)
PDU	104	Icon Mania (P)
PDU	151	Fixdisk (P)
PDU	164	Games music creator (P)
PDU	186	Falcon Bootblock creator (P)
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PDU	366	IBM Emulator (P)
PDU	367	Atari ST Emulator (English version)
PDU	368	Spectrum Emulator v1.2
PDU	369	Fish # 379 C64 Emulator
PDU	370	Flexibase (Database) (P)
PDU	371	Nuke v1.3b (Saddam killer) (P)
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PDU	377	M-CAD (Design program) (P)

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PDU	420	PRINTER DRIVER GENERATOR
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PDA	124	Stealthy Maneouvres (Eric Schwartz) (P)
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PDG	75	Tanx The Game (P)
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PDD	070	Rebels Megademo
PDD	072	Red Sector Demo # 4
PDD	075	Scoopex Demo
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PDD	097	Predators Megademo (2 Disks)
PDD	098	Safe Sex Demo (P)
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PDD	130	Chubby Brown Demo (P)
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PDD	134	Magnetic Fields Demo # 45
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PDD	153	Billy Conolly Demo (2 disks) (P)
PDD	160	Hatrick "Rave on"
PDD	177	Budbrain II
PDD	179	Crionics "Total Destruction"
PDD	238	Iraq vs Kuwait Demo
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PDD	288	Phenomena Terminator
PDD	292	Batman Demo (P)
PDD	306	Digital Innovation By Anarchy
PDD	307	Virtual Worlds
PDD	308	Universal Intensity
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PDD	310	Decaying Paradise By Andromeda (P)
PDD	311	Oddessy By Alcatraz (5 Disks-Superb!)
PDD	312	HARDWIRED - by Crionics and Silents (2 Disks)
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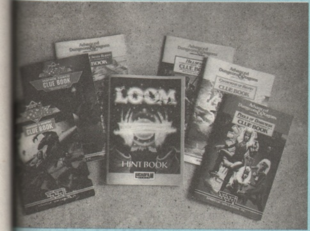
BOOKSHELF

PART 1

With the Christmas season fast approaching, CU Amiga takes a look at a selection of Amiga-based books currently available.



If you're a committed gameshead, then these books are essential reading. Contained within are hints, tips, clues and walkthrough guides to all the latest adventure and RPG games.

GO ON, GIVE US A CLUE

If you've ever been stuck in an adventure, you'll know how frustrating it can be. With no one to turn to, you could be trapped in your pixel prison for all eternity. But wait! Help is now at hand in the form of countless clue books to help you on your travels.

For years gamers have been getting stuck in adventure and RPG games. Right from the start of *Colossal*, someone somewhere has been pulling their hair out in frustration. Many magazines offer write-in helplines, but questions can often take months to get answered and that's no help at all if you want to carry on playing.

So where can the committed RPGer or Adventure fanatic turn for help? Fortunately, many companies are realising that there's a small fortune to be made in producing player's guides to their own games, and the number of clue books has grown rapidly over the last five years. US Gold have some of the best, produced by their SSI and Lucasfilm counterparts in the US. The entire AD&D series has been documented in this way, and these are definitely worthwhile investments for any avid fans of the genre. The books are bought direct from US Gold themselves, and vary in price from four pounds to around fifteen. That might seem like a hefty wad just to know how to get past the Ogre with the enchanted padlocks, but let's take a look at what you get for your money.

In the case of the AD&D books, you get a sixty-page tome bursting with information. These A5 guides begin with general hints on how to play the game and what to look out for, and then explode into detailed, annotated maps of every location in the game, including towns and buildings.

You might feel that a book of maps is fairly pointless, especially when you consider that you can easily make one as you go along anyway. However, the detailed walkthroughs prove invaluable and should be a priority purchase of AD&D fans everywhere. There's no danger of the solution spoiling the surprise elements of a game, either, providing you can resist the temptation to sit down and read it from cover to cover.

Fifteen pounds might sound like a lot of money, but that really depends on how much you want the information. The books keep their promise, and tell you everything about the game, so value for money is high.

If you want more information, or would like to order any of the books in the range, then here's what to do...

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The following books listed in the box below are currently available from US Gold. In the near future Indy 4 will be added to the list, but we'll have to wait for the game to be released first. This list was correct at time of going to press, but new books are added constantly and old ones deleted. Postage and packing if free of charge and delivery is guaranteed within 48 hours subject to availability. If you wish to make an order, please make cheques/POs payable to US Gold Limited. Send to: Customer Services, US Gold Software, Units 2-3 Holford Way, Holford, Birmingham B6 7AX. Alternatively you may wish to place your order over the telephone using Access or Visa cards. Tel: 021 625 3388.

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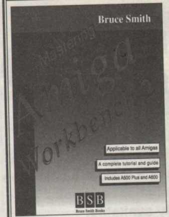

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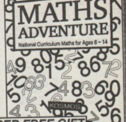
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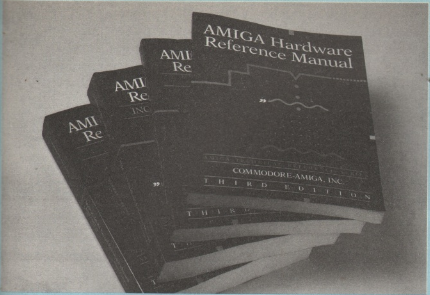


If you're intending to do anything other than play games on your Amiga, then these books are the bible of Amiga computing. They may be expensive (this lot'll set you back more than £120!), but there certainly an investment.

AMIGA REFERENCE MANUALS

John Kennedy checks out the facts within the new official Third Edition reference manuals. Is this ideal bedtime reading?

It's an interesting fact – and one largely overlooked – that the operating system used by the Amiga range of computers is probably the most sophisticated available for any desktop micro. Forget the PC and Macintosh systems, for although both have graphical user interfaces (GUIs), neither have totally mastered the concept of true multitasking.

The Intuition system and the EXEC core of the Amiga are well proven, reliable (yes, really) platforms and provide more scope for expansion than any rival. You may only play games with it, but your Amiga is one heck of a machine under that beige exterior.

It goes without saying that in order to make the most of the Amiga you need the right books – no one can carry all the information around in their heads without severe loss of higher brain functions. Most bookshops have shelves of 'Guide to the Amiga'-type tomes, but for the true facts you need the official guides.

After the various Workbench 2 launches (officially on the A3000, accidentally on the A500Plus and finally on the A600), a new set of books were needed. It was time for the three WB1.3 manuals to be pensioned off, and finally their replacements have arrived.

As Workbench 2 has grown – in ways we'll soon see – so the necessary documentation has grown, too. Now there are four books: the Hardware manual and 'Includes & Autodocs' remain whole, but the 'Libraries and Devices' volume has split into two parts.

Taking the Hardware manual first, very little has changed. For starters, any new changes to the chipset (i.e. the much talked about ECS) have been relegated to one cramped appendix of 15 pages. These changes haven't even made it into the example Include file, which is sloppy.

There are no more example programs. The esoteric and not very useful sections on keyboard and audio remain intact. The lack of continuity remains (it's plain that different chapters were written by completely different authors) and there is still no standard way of presenting a chip summary at the end of a section.

Apart from the minuscule ECS appendix, the only new information is a section on the mysterious Zorro II and III layouts. An example listing is lost as a result. There are no mentions of the A500 Plus, the A600, the A590, the A520, the A570, the CDTV and nothing at all about new forthcoming chipsets.

The Hardware manual is now 465 pages, due to more spacious layout, the ECS section and the Zorro information. Overall, this manual was a great disappointment. To make a 1.3 programmer buy this new volume simply for 15 pages of curt ECS notes is not very nice.

Commodore obviously do not like hardware level programmers, which is a very snobbish attitude towards the people who have written the games which have given them all jobs in the first place.

The remaining three books form the Amiga ROM Kernal Reference manuals, and they are a different kettle of fish altogether. The 'Includes and Autodocs' is by far the least interesting – that's not to say it's not useful, but unless you actively enjoy reading sections from a 1003 page collection of function descriptions and include listings you won't be taking this one away with you on holiday.

Better to plump for the remaining two books. 'Devices' is a list of, erm, the Amiga's devices. This entails the serial and parallel ports, timers, keyboards, printers, SCSI, console, audio, gameport and trackdisk devices.

Each section in this 570 page book is extremely detailed with an abundance of example listings. The 'Devices' work also includes 200 pages on the Amiga's IFF standard. This section is essential reading, as it includes example listings for accessing IFFs (of the video, sound, animation and so on varieties) and also detailed descriptions of registered IFF types.

Which leaves one more book – 'Libraries'. This one is definitely the book to buy first, as it has more than a hint of tutorial about it. If you are wary of upgrading your 1.3 books to these third editions, this is the one that will convince you.

In their quest to make the Amiga easy to program, the OS programmers have given us all two wonderful new presents: The ASL library and the GadTool library. The ASL, which I guess stands for 'Amiga Standard Library', provides a common File Requestor and Font requestor. As you will have no doubt found, every program seems to have its own way for asking for files. Some requestors are great, but unfortunately by no means all. Now programmers have the option to use a sensible standard requestor, and life should be a little easier for all of us.

Likewise the inclusion of GadTools will help to standardise and simplify normal gadgets and menus. Intuition programming is now a whole lot simpler, and with other extras such as the IFF Parse library to do all the hard work, the Amiga should be getting a batch of really good WorkBench 2-only programs any day now.

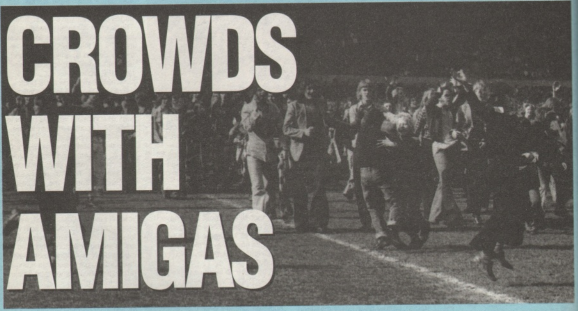
Other sections include details on the Commodities Exchange Library, and a special section for those who like to have some incredibly complicated concept to keep in reserve for when they think they know everything: BOOPSI – the object orientated Intuition system.

In conclusion, the new reference manuals are an essential purchase for programmers. Although pricey, the information they contain cannot be done without.

The Amiga ROM Kernal Reference Manuals and The Amiga Hardware Reference Manual are published by Addison-Wesley (Tel: 0734 794000) and are available from most large bookshops or direct from the publishers.

As the Amiga's popularity spreads, the machine is being used for an ever increasing number of purposes. Mike Gerrard looks at a program used by the Scottish Police Force to help them learn crowd control techniques and prevent a repeat of the Hillsbrough tragedy.

CONTROLLING CROWDS WITH AMIGAS



BIG BROTHER

Education doesn't begin and end with children in a classroom and four Amiga 2000 workstations are proving their worth at the Scottish Police College in Tulliallan Castle, Clackmananshire. In this grand setting, where training takes place for the 14,500 police officers in Scotland's eight forces, senior officers are using an award-winning program called VISTRAIN to learn all about crowd control at major sporting events such as football matches. The program, which incorporates specially shot video footage, is said by experienced officers to be as near to the atmosphere of a live soccer match as it's possible to get. Oddly enough, VISTRAIN came about because of a rather different Amiga program: The Good Duvet Guide!

DUVETS

The Good Duvet Guide was developed by the National Computing Centre (NCC) for the House of Fraser, and was used in twenty of the company's nationwide stores. It provided point-of-sale help for customers interested in buying duvets, as John Eary of the NCC explains: 'Not many people know the information they need before buying a duvet, so tend to go for the cheapest. This program quizzes you – in the nicest possible way - about your sleeping habits, then advises you on the best choice of duvet. Producing this program had given us an appreciation of the Amiga's capabilities.'

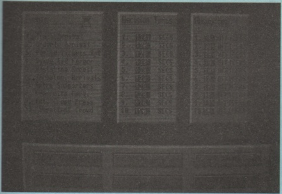
Another NCC project had been for London Underground, where they produced a simulator for tube drivers, using graphics in a mock-up cab. This was seen by the Scottish Police College (SPC) who originally approached NCC about providing a similar program to train police drivers.

'In the course of the conversation,' says Eary, the Manager of NCC's Training Products and Services division, 'it came out that they were also looking for ways of training senior officers in the techniques of crowd control at football matches. It occurred to me that instead of doing this by the conventional one-to-one means, you could network computers together so that each one would give only the view of the officer at a particular point in the stadium. Obviously the officer-in-charge inside the ground can only see certain things happening, while the officer-in-charge outside the ground has a different viewpoint, and a great deal of information is conveyed by radio messages.'

NO-WAY RADIO

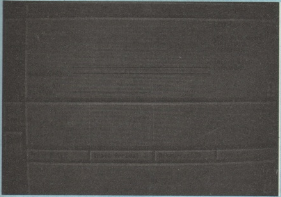
The difficulty of communicating in this way is described by Chief Inspector Peter Willis of the Scottish Police College, who was heavily involved in developing the VISTRAIN project. 'At a capacity football match where you've got something like 50,000 spectators, the atmosphere is noisy to say the least, so noisy that it makes exchanging radio communications very difficult. And if it's a cup final where you've got intense rivalry between sets of spectators then the atmosphere can only be described as electric.'

The noise, pressure and atmosphere was simply not possible to recreate using conventional classroom training methods, where officers would receive lectures and then be quizzed on their reac-

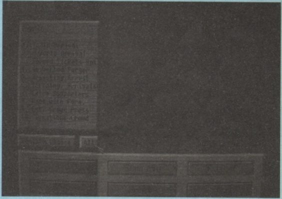


Using a mouse the team can select context-sensitive help. There is also a browse facility so that text, maps and other pictorial information from the briefing can be recalled to assist the teams.

The exercise is divided up into four scenarios: before kick off; first half of the match; second half; and dispersal after the match.



The team's performance is assessed during the exercise by the facilator who is provided with an on-screen storyboard indicating the appropriate actions that each team should take.



Continuous background video has been used throughout the exercise and teams see only video which relates to their role. They have only a partial view of the situation.

tions to events. 'You can't recreate that noise and atmosphere on a piece of paper,' Willis maintains. 'Previous methods were very clinical, highly intelligent, but could not teach officers what it was like to react under pressure.'

VISTRAIN, Video Based Integrated System for Training Applications, was developed jointly by NCC and the SPC over a period of twelve months, as part of the 'Technology In Learning' programme of the Department of Employment. The system at Tulliallan Castle now comprises four Amiga 2000 workstations, linked to Sony Laservision video disc players which contain live footage recorded at two football matches, including helicopter shots, with additional footage shot at the college using students and staff. These four Amigas are further linked to an Amiga 3000 workstation, which is used by the facilitator who runs the exercise, and a sixth machine in the form of a Commodore bridgeboard is connected to an audio network which records all the personal radio messages for playback and analysis during the debrief sessions after 'the big match'.

TALKING BACK

'That is often a very revealing exercise for the participants,' Eary says. 'There are occasionally arguments when one person says "I told you that" and another one says "No, what you said was..." We can play the tape back and establish what was said, and this helps officers avoid possibly ambiguous messages. What is more important is that afterwards people have a chance to look at things from all points of view. They can see what was happening when a particular message came through, while the person giving the radio message might learn how in fact it was not really conveying full information about the events they were witnessing.'

Although the 'match' itself takes place at a mythical Scottish football ground – to avoid giving advantage to officers familiar with specific grounds - the details are as real as it's possible to be. The program can set the size of the expected crown, the time at which particular trains are due to arrive and which streets the crowd will flow through to reach the ground. There are elements that may or may not occur at specific matches, such as someone suspected of selling forged tickets, while the facilitator can then throw in some rogue elements: the crowd is suddenly much larger than expected, a train is late, the fans inside the ground get impatient as the kick off is delayed, or someone throws a canister of CS gas.

SPREADING THE MESSAGE

Chief Inspector Willis points out that VISTRAIN was not developed as a result of specific incidents such as the tragedies of Hillsbrough or the Bradford Fire. 'The program was on the cards before Hillsbrough,' he says. John Eary points out that these exercises over-qualify officers for dealing with trouble at matches: 'This gives them experiences beyond anything they're likely to be called upon to deal with, so they will be able to cope that much better. They'll think "this is nowhere near as bad as the simulation was". We haven't yet gone into the English and Welsh forces because of the way they're organised. They're much more fragmented than the Scottish system, but we've had enquiries from various European forces where their problems at the moment are, if anything, even worse than our own.'

VISTRAIN has already gone into Europe, as in 1991 it won an ETTE (European Training Technology Event) Application Award for the most innovative and cost-effective multimedia application of training technology. But Chief Inspector Willis should have the last word: 'VISTRAIN simulates a football match, the atmosphere, the noise levels, it makes speaking difficult, it's just very realistic. And the evaluation reports we've had on these exercises confirm that this is the case. Officers who have had previous experience of controlling crowds say that this is as close as it's possible to get to the real thing. There's no doubt that a program like this is going to save lives.'

(For further information about the system contact the NCC on 061-228-6333)

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3D, 22 MAN MATCH DISPLAY

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OU'LL/ATT/MID/DEF POSSESSION OF STATS. IND PLAYER ACTIVITY STATS.
PLAYER FATIGUE /FITNESS STATS. STATE-OF-THE-GAME INFORMATION
PLAYER-WITH-THE-BALL INFORMATION

IN MATCH TACTICAL MOVES

SUBSTITUTIONS
POSITIONAL CHANGES
OVERALL WORKRATE
IND. PLAYER WORKRATE

Yet another England manager has learnt the hard way that controlling an international squad is a very different ballgame to club management. Every match is a cup-tie and every team -selection and result is picked apart by a voracious press. The pressure to succeed is incredible.

Soccer Supremo puts you in charge of a European national squad preparing for the European Nations Cup qualifiers. You have an initial four year contract that may be extended to six or eight years, or reduced to two, as the results dictate. You'll be expected to qualify for the Finals, then put up a show against the best European teams. but this is just preparation for the big one:The World Cup!

Customisation. The game will allow you to take the European nation of your choice and you will be allocated an initial squad of 16 players. You can introduce a further 34 players, making 50 in all, whose names and skills (but not levels) You can define yourself. These players are introduced gradually as you discover the weaknesses in your squad and also to create the balance of skills that match your style of play. The original 16 players can be defined in the same way using the EDIT program (free with the game) if you wish as well as the teams that will make up the opposition.

HEAD COACH V3

"When it comes to the 4th down Headcoach has it".'Headcoach' 'TV Sports Football' ' head to head.'
(Pop Comp.)

Headcoach V3 has been described as "the best game ever put onto a computer". It is the complete American Football game, a multi season epic with the very best strategic elements of the real thing. You will call the plays, devise the gameplans and develop the team.

Use the first season (2 pre-season games, 16 regular season games, and the play-offs) to discover yôur 45 man squad of players. Then exploit the college draft to improve the team and expand your game play to beat the very best the NFL can throw at you.

Players will age and teams will fade (a player will last about 6 seasons), but you will stay and rebuild ....

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NAME ....
ADDRESS......................................
....
....

inside information

If you want to take a peek at the latest software games charts or merely want to take a stroll down memory lane, Inside Info is here to serve.

THE WAY WE WERE

THREE YEARS AGO

- Activision finally signed up the rights to *Ghostbusters II*, presumably because the original turned out to be the best-selling computer game of all-time. *GB2* was, with hindsight, utterly dreadful and failed to sell.

- Other new licenses announced three years ago this month included *Peanuts* (The Edge), *Count Duckula* (Alternative), *Moonwalker* (US Gold), *Beverly Hills Cop* (Tynesoft), *Elvira* (Horrorsoft) and *Spiderman* (Empire).

- *Altered Beast* from Activision finally arrived, and Mark Patterson lapped it up, giving it a whopping 87% and a CU Amiga Screenstar. Funnily enough, he didn't rate the C64 version quite as highly...

TWO YEARS AGO

- Jason and Kylie had just been signed to Zeppelin! Needless to say, it was truly dreadful when it was finally released earlier this year.

- While the Simpsons licence was up for grabs, Domark unveiled *Hard Drivin' 2*, Krisalis prepared to do it to them before they did it to us with *Hill St. Blues* and *Rogue Trooper*, and US Gold released *ESWAT* which was brilliant on the Megadrive but only passable on the Amiga.

- *Powermonger* and *MiG-29* received the preview treatment and went on to critical acclaim upon their release. Remember, you saw them here first.

- Screenstars were being handed out like confetti two years ago, with our October issue sporting no less than nine such accolades. The lucky ten included *Mean Streets* (90%), *Simulcra* (90%), *Torvak* (86%), *Pang* (87%), *Loom* (85%), *Indy 500* (85%), *M1 Platoon* (90%), *Wings* (94%) and *Captive* (86%), but none of them got close to Superstar-awarded *Wonderland* (96%), which featured the new Magnetic Windows system.

ONE YEAR AGO

- 'HOW TO INVENT AMIGA GADGETS' screamed the headline across our cover as the magazine opened up into an 'Innovations' section, telling you how to get ahead in the hardware stakes.

- Steve Merrett went up to Core Design to preview *Heimdall*, a graphic adventure that promised to be the most attractive ever. It certainly lived up to expectations a couple of months later.

- *Lotus 2* appeared to a round of applause from Dan Slingsby, who gave it a whopping 93%. He reckons that 'once you've played *Lotus 2*, you'll never want to play another race game again'. Check this issue for a review of the latest incarnation of Shaun Southern's fabled racer.

TOP 20 AMIGA GAMES

With Sensible Soccer still holding onto the number one spot, there were few new releases to challenge its position except for Ocean's awful multi-sports game, Espana 92.

1. SENSIBLE SOCCER (Renegade)
Month three at the top. It looks like Anco have a real fight on their hands this time. CU Screenstar, 91%

2. CIVILIZATION (Microprose)
Sid Meier's latest and greatest rockets up the charts, and deservedly so. An excellent strategy title. CU Screenstar, 86%

3. ESPANA 92 (Ocean)
The most successful Olympic tie-in, but not a particularly good game. CU gave it 59%

4. FIRE AND ICE (Renegade)
This great platform game finally begins its slippery descent. Graftgold at their best. CU Screenstar, 85%

5. LURE OF THE TEMPTRESS (Virgin)
Lucasfilm had better watch out. Virgin's eagerly awaited rival to Monkey Island is still in the charts and doing well. CU Screenstar, 89%

6. MONKEY ISLAND II (US Gold)
Another side-on arcade adventure in the top ten. Boy, you lot are lapping this type of thing up, aren't you? CU Superstar, 95%

7. CRAZY CARS III (Titus)
This is the best effort they've done so far, but still has a long and winding road before it beats *Lotus*. CU awarded 71%

8. PROJECT X (Team 17)
One minute it's falling out of the charts and the next this superlative blaster fights its way back again. CU Screenstar, 92%

9. FORMULA ONE GRAND PRIX (Microprose)
Geoff Crammond continues to burn up the charts with this logical continuation of *Revs*. A stormer. CU Screenstar, 93%

10. DUNE (Virgin)
With only a couple of months to go before the release of the sequel, *Dune* is still burrowing its way into your homes. CU awarded 81%

11. F-15 STRIKE EAGLE II (Microprose)
A massive re-entry into the charts for this old Microprose battle-sim. Bill Stealey doing what he does best.

12. DARK QUEEN OF KRYNN (US Gold)
More AD&D fun from SSI. Not for everyone, these games have certainly built up a cult following.

13. LEGEND OF ISHAR (Daze)
Ishar is a huge, graphically excellent adventure, and you obviously agree. CU Screenstar, 89%

14. STRIKER (Rage)
The only other game to challenge the *Kick Off* crown. Perhaps not faring quite as well as *SensiSoccer*, but still very good. CU Superstar, 95%

15. ON NO! MORE LEMMINGS (Psygnosis)
A whole stack of extra levels for all you Lemmings freaks out there. 100 new ways to die, as they say. CU Screenstar, 91%

16. ALIEN BREED (Team 17)
Gauntlet meets Aliens best describes this engrossing blast as you traverse a space station cleansing all forms of alien life. CU Screenstar, 91%

17. EPIC (Ocean)
This fantastic 3D sci-fi blaster has its critics, but we all loved it. It's not very long-lasting, but what there is, is very impressive stuff. CU Screenstar, 91%

18. PINBALL DREAMS (21st Century)
An interesting attempt to recreate four pinball tables on your Amiga. Obviously a very popular idea. CU awarded 71%

19. FLOOR 13 (Virgin)
A strange tale of spy and counter-spy. Not to everyone's taste, but with a definite appeal. CU Screenstar, 85%

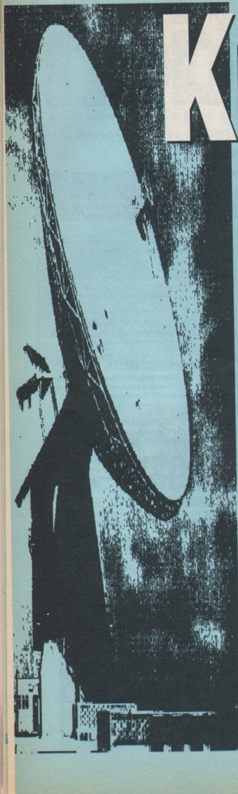
20. DYNABLASTER (Ubisoft)
This very cool and very cute bomb'n'blast classic has caused some very late nights at CU Towers. CU Screenstar, 85%

WHAT THE TEAM ARE PLAYING THIS MONTH

DAN SLINGSBY
Lotus III, Beast III, Putty

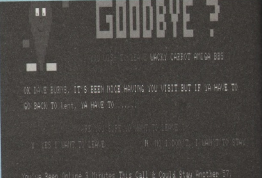
NICK VEITCH
With Himself, Sensible Soccer (getting better at both), Lotus III, (and definitely playing at being truant)

TONY DILLON
Lotus III, Putty, Sim Earth



Knock on

When is a door not a door? Answer: When it's a program within a program on a bulletin board. Dave Burns investigates.



```
GOODBYE ?

YOU WISH TO LEAVE WACKY CARROT AMIGA BBS

OK DAVE BURNS, IT'S BEEN NICE HAVING YOU VISIT BUT IF YA HAVE TO

GO BACK TO kent, YA HAVE TO ......

ARE YOU SURE YO WANT TO LEAVE ?

Y  YES I WANT TO LEAVE          N  NO I DON'T, I WANT TO STAY

You've Been Online 3 Minutes This Call & Could Stay Another 57,
What's It Gonna Be ?
```

The very friendly carrot waves goodbye, hoping that you will call again soon

OPENING DOORS

A door is a program running from within a program, and in BBS terms it means the online games and utilities found on any system worth its salt. What actually happens is that the user selects the option they want, be it a seperate chat system or even a game, and the board software calls the program, at the same time passing to it any information it may need, such as the users name, security level etc. This month we're going to take a look at some of the doors available to you on the public domain or shareware scene. Apologies in advance to anyone running a door that's not listed here. It was only when I started to research this article that I found that there was such a variety of doors available.

CALLSYSOP V2.0a

Every BBS setup has a sysop paging option, but they are pretty bland and plain. This program makes paging and answering a little more interesting. Installation is not as easy as with most doors, but it is well worth persevering.

When a user pages, they are asked to enter a reason for their call. This gives the sysop prior notice of the subject matter, an excuse to end chat when it is dealt with, or even the ability to decide whether or not to answer the page. Another great thing about this paging system is you do not need to be satisfied with the dull beeps usually produced as you can set up a sample player and incorporate all manner of weirdo samples to alert you that your user wishes to converse.

Should you not answer, the fact that Fred logged on will be entered into a log file for you to look at when you are available. To round it all off, this program is Freeware, so nobody will be after your hard earned money.

BLACKMARS DUNGEON

This is, as expected, a game. Also as expected, this is a Dungeons & Dragons type game. There are the usual baddies lurking around with the intention of doing nasty things to you, there are spells, swords and shields – there is even a map

GOING PUBLIC Setting up a BBS is a commitment. You will be devoting a lot of time and equipment to the system. Before going online, make sure that everything is right. Nothing will lose you users faster than a system that does not work or is too complicated for people.

Your system is on public view and great care must be taken to ensure your system is legal. You cannot be held responsible for any messages left on your system, but you can be in trouble for having commercial software available. A BBS was recently raided by FAST. Not naming names we will call this board System X. The powers that be had heard that commercial software was available for download. The best thing to do is have an area set aside for uploaded files that your users cannot access to give you a chance to make sure that nobody has sent you cracked files. Once you have checked you can then place the files in the relevant public download areas.

Establishing a BBS takes time. Nobody is going to know it is there unless you advertise! Leave messages on other boards, write to the free ads papers, and best of all, write to me at the magazine address. I will come on and have a look, if I like what I see your BBS will grace the pages of this very magazine. You can also contact me and the magazine by leaving a message in the CU Amiga area on the HOTEL BBS, (0634 831389 24 hours) or Wombats Burrow II (0634 377303 10pm - 8am daily). There are other systems that carry this area, so watch out for it when you log on.

the doors

of the early stages of the maze for the users to download. Magic and mystery abound in this one, and it is not unusual for a user to enter a room and log off only to return and find that he has had several battles with other users and amassed oodles of points, or that he was killed by someone while he was away. The reason for this is that should a player enter a room where another user has left a character the computer will play for them. This is not a very exciting game if none of your users play it, so the more you can encourage to join in the better. Setting up is moderately easy and quite well documented although you do need to update the file daily, so including it in your nightly events is a must.

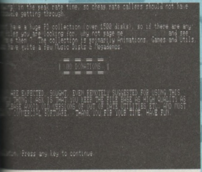
PABBSLIST V1.00

Another utility, this one is an online database of other BBSs that users can peruse at their leisure and add details of their favourite boards. Well presented, easy to use and install, with the bonus of being Freeware, this program (or something like it) is essential if you want to provide a good service to your users.

SPACE EMPIRE

You guessed it, another game. This one involves the user in an attempt to conquer the entire universe. To start with you need to build an empire, amass an army, feed them, equip them etc. To do this you need to specify the function of the planets in your empire, some would be agricultural, some would be mining for ores, others would be for defence. Then you must sell your produce to raise the capital to fund your endeavours. If you raise enough you can engage in espionage to find out what other players are doing when they decide to become unreasonable and attack you. This will give you advance warning of what weaponry they have, or even what planets they have that you can attack. The more people you have playing the better it gets as users can form alliances to rid the world of particularly troublesome players, then dissolve them when it is time to stab their erstwhile allies in the back.

Setting up is reasonably simple, although should a user manage to conquer the entire universe the sysop has to delete all statistics and start again. It would also benefit from a more permanent hall of fame.



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 in the peak rate time, so cheap rate callers should not have
le getting through.

have a huge PD collection (over 1500 disks), so if there are any
les you are looking for, why not page me              and see
e then ?. The collection is primarily Animations, Games and Utils,
ave quite a few Music Disks & Megademos.

                    | NO DONATIONS |

ARE EXPECTED, SOUGHT, EVEN REMOTELY SUGGESTED FOR USING THIS
THING I ASK IS THAT YOU KEEP THE FILE BASE AS HIGH QUALITY AS
EASE AVOID OLD VERSIONS OF OUT OF DATE UTILITIES ETC. AND MOST
OMMERCIAL SOFTWARE.  THANK YOU FOR YOUR TIME, HAVE FUN.

n. Press any key to continue.
```

Look mum, no money!!!! Let's send loadsa files instead

TIMEBANK II

I had never used or seen the need for a timebank until recently when I tried to download a rather large file and did not have enough time left to do it. This is where theTimebank comes in useful. Let's say you have logged on to a board that allows 45 mins a day. You use 10 mins. You can lodge the other 35 in the timebank ready for the time when you need it, e.g. when you need to download a large file or you have got stuck into Space Empire and you need the time to wipe out a particularly irritating user. Just withdraw your deposit at the Timebank!!

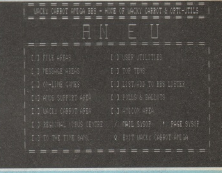
Setting up is simply a case of telling the BBS where to find Timebank, and the benefits to your users are great. Happy user = more calls.

THE REST

As I said at the top end of this article, there are many many doors available, some good, some not so good. Before spending a fortune logging on to a system and downloading every door in sight, find a board that has the door you are thinking of running and look at it from a users point of view. Ask the sysop about setting it up. Will it work with your software? Do you need any additional software? Is there a support service or helpline for it?

Don't be like one sysop I know, though, who filled his hard drive with so many online games and utilities that he forgot to leave room for the message bases!

This just about winds up this short series on setting up your own BBS. The feedback I've had from the CU Amiga area on Fido has been mixed, but on the whole very good. Keep those messages coming, let me know what you want to see in the column. We at CU have the strange belief that you, the reader, are important. I have only given a very brief outline of what is needed as all the programs mentioned are very well documented, and aside from that, not everyone wants to use the same system. What I did discover while wandering around the systems is that all Amiga sysops are without exception very helpful. Instead of worrying about competition from new systems they'll do all they can to get you online quickly and painlessly.



```
| WACKY CARROT AMIGA BBS - HOME OF WACKY CARROT & OPTI-UTILS |

                      M E N U

| [ ] FILE AREAS                [ ] USER UTILITIES
| [ ] MESSAGE AREAS             [ ] TOP TENS
| [ ] ON-LINE GAMES             [ ] LIST/ADD TO BBS LISTER
| [ ] AMOS SUPPORT AREA         [ ] POLLS & BALLOTS
| [ ] WACKY CARROT AREA         [ ] AMICON AREA
| [ ] REGIONAL VIRUS CENTRE     /  MAIL SYSOP     !  PAGE SYSOP
| [ ] TO THE TIME BANK          Q  EXIT WACKY CARROT AMIGA
```

The main menu shows how much there is on offer to those wise enough to call

WHACKY CARROT AMIGA One chap that gave me a call recently went by the handle of The Optimist. First he said lots of nice things about the column, then got to the heart of the matter. Why have I never mentioned his board, Whacky Carrot Amiga on 0732 871878, 24 hours, speeds up to V32. Well, I told him, because I had never heard of it, but being the nice chap I am, I immediately loaded up my comms software and went to visit.

The mere name conjures up images of a totally nutty board that just couldn't care less, fun for all etc, and that's exactly what I found once I got past the logging in procedure and all the bulletins (Optimist, I don't mind reading them once, but can you put them in a separate menu so we have a choice after the first call? Thanks.).

This board is not networked, therefore the only people that will read any mail on this system are the people that log on to it. Unusual these days, but this does not detract from the board. Message bases on a variety of topics are quite lively and the board has a wide cross section of users. There are a lot of files available once you have been validated, (usually within 24 hours) and if the file you want is not listed then the sysop will do his best to obtain it for you.

It is rare to see a sysop that does so much to ensure the happiness of his users, but I found that within a few hours of my first call I was called back to see if everything was to my liking and asked if there was any improvements I could suggest.

There are also a lot of online games and utilities available, although one that I tried, Krazy Casino, did not fill my little heart with delight, the graphics were poor, but others could have sent my phone bill sky high had I stopped to play. Presentation of the board was quite nice, and one of the bulletins did mention that all that is required of users is that they enjoy it and maintain the high standard of the files areas. It even said NO MONEY REQUIRED. My second call asked for my name and password, but as a further security check, the last 4 digits of my phone number. Nice touch if you happen to be one of those that uses the same password on all the boards that you call.

The system used is AMICON BBS software and there's over 300 Mb of online storage that is put to good use with files and doors. In fact all the doors mentioned in this column are available from this system.

BACKCHAT

STICK 'EM UP

I'm a bit fed up with games that aren't hard disk installable. Although not a new problem, I think the computer companies have a cheek to simply ignore it. The same can be said for second drives – when I purchased mine and saw that the majority of titles did not cater for it, I hoped the situation would get better – which it is doing, but only slowly.

With the price of software so high, I believe these companies owe it to their customers to make as many games as hard/second drive compatible as possible.

As an example, let's look at the ageing strategy game, *Joan of Arc.* Before loading, a simple prompt appears asking how many drives you have and then the game loads accordingly. This is a nice idea which surely doesn't take up too much time and memory to produce, yet it is a big help to gameplayers.

I would like to see companies place small stickers on their game boxes saying if the contents are hard and/or second drive compatible. If, for some reason, this is not possible, perhaps the computer magazines could help. They could mention drive requirements in their reviews or, preferably, in the same box displaying the game's name and price etc.

Stuart Hardy, Sheffield.

Our recent survey revealed that just over a quarter of you either had a hard disk or were thinking about buying one in the next 12 months. With this kind of support, I would guess that more and more games publishers will support hard drive installation. As for supporting second disk drives, it's one of my pet hates when a multi-disk game comes into the offices and only runs of one drive. Stupid.

WHO NEEDS CONSOLES?

I really can't see the attraction of buying a console. Why is everyone ranting on about how marvellous games are on the Megadrive and the SNES? Most of the games I've played on these machines have been awful and they cost so much more than Amiga titles. If you like beat 'em ups or shoot 'em ups, then you'll definitely find something worthwhile, but what else have these machines to offer? Nothing, as far as I can see. Okay, they're capable of a few graphical twists that leave the Amiga behind, such as full screen rotation, sprite expansion and 15 zillion colours, but so what?

The Amiga is obviously getting on in years. The basic architecture dates back to 1986, so you've got to expect that there'll be some machines that can out-perform it in some spheres, but it can still hold its own with the best of them. Despite the console wars, the Amiga definitely has the edge in the quality of games being released for it. Just look at recent releases such as *Zool, Risky Woods, Civilization, Eye of the Beholder 2, Monkey Island 2, Project X, Sensible Soccer* and there's many more classic games scheduled for release before the year is out.

BUT, MOST IMPORTANTLY, Amiga games are much cheaper than their console counterparts, by as much as £25 in some cases. Also, I hate to say it knowing your anti-piracy stance, but consoles can't be copied whereas floppies can. There'll always be a place for a decent home computer, as it's just a lot more flexible and offers so much more. Let's hope the new Amigas can keep the flag flying, as I for one am very loyal to the machine and have built up a large software collection that I'd hate to see go to waste.

David Chester, Barnsley.

My feelings exactly, Dave. The massive user base in this country should ensure the Amiga continues to thrive for many years to come. I've got a Megadrive at home and have amassed quite a few games for it, but apart from *Sonic* there's little else that stands out. The Amiga has a wealth of games and these aren't just aimed at the shoot 'em up fan or platform fanatic. The number of different game genres on the Amiga make it the best all-round games machine by far.

DOING IT FOR YOURSELVES

Thanks very much for the DIY tutorials in the latest issue of CU Amiga. I'm a keen electronics fan, so I had a lot of fun attempting to emulate your designs for the various gadgets. Is there any chance you'll be continuing this feature in future issues, as it's certainly a way to save a lot of money. Congratulations on a superb feature.

Generally, I think the standard of your magazine has improved immeasurably over the last few months. I'm particularly impressed with your eclectic Blue Pages which offer all sorts of advice and features not available in any other Amiga mags, although I'd like them kept a games-free zone rather than have them include the likes of Helpline and Inside Information.

I'm also impressed with the quantity and quality of software that's now available for the Amiga. Each month there seems to be 100s of new titles released – I just wish I had more money to spend on them. Alas, I'm limited to one game a month and I splash out on a productivity title every couple of months, but only if it's something really special, as I buy a lot of PD utilities which usually give me what I'm after.

I've noticed a lot of people knocking Commodore in your pages recently. I think this somewhat unfair. You've got to understand that, as a company, they're out to make money. They, more than anyone else, want the Amiga to succeed and I'm sure they're already designing machines to take us into the next century. Just be patient, things'll work out in the end. All this talk about the PC/Console threat. Pah! CD-based software is the future, and Commodore have CDTV2 up their sleeves as well as the finally-launched A570 CD-Rom drive flooding into the shops. It'll be a good two years before the really breathtaking product materialises, but when it does, it's going to knock everybody out for sure.

Paul Harken, Mansbridge.

I agree that CD-based systems are the future of home entertainment, but which one will succeed is anybody's guess. There isn't that much decent software out there at the moment (you only have to read our Multimedia feature this issue to figure that out!), but some of the stuff we've seen in development will knock your socks off. Virgin's *Guest*, Gremlin's *Li'l Devil*, Psygnosis' *Microcosm* and some of the Stateside stuff is incredible. I just hope CDTV doesn't become a disgarded standard like Betamax for video systems.

Oh, and the DIY feature is going to be a semi-regular part of the magazine. We're already working on the next installment which will save you literally hundreds of pounds!!

LOST FOR WORDS

Thankyou, thankyou, thankyou! I've never written to a mag before, but I felt compelled to shower you all in flowery praise and syrupy happiness. [Five pound notes would have been just as good – Ed].

The reason for my cloud nine-type joy is the word processor on your August cover disk. I am currently creating a gothic horror PBM – but was in a state of disarray because I knew I had to buy a word processor. As these cost money, and I didn't have any, I was resigned to the fact of putting the project on hold. Then, looking in my local newsagents I saw your August issue, complete with a REAL word processor on the cover.

I cannot tell you how grateful I am. I've only had it a few hours and I've already got three files saved on the other disk (yep, I blanked the demo one!).

Joseph Shan, Somerset.

Thanks for the kind words about our *Transwrite* coverdisk. Each month we try and bring you something different, to help build up one of the best Amiga software collections around. If you're into music, we've given you *OctaMed*, if you use a car, then we presented you with *GB Route*, if you want to write letters, then *Transwrite* was the perfect answer. It might cost us a small fortune to buy them, but as long as we can do the deals, we'll continue to bring you the best Amiga coverdisks money can buy.

SCORE DRAW

With reference to the 'Scores on the Doors' debate in the July 1992 issue, I agree with your concern about the ever-increasing marks being handed out by some mags. But I also think that your solution for reducing the scores that games receive, by including originality, is not the answer.

For example, suppose I have decided to purchase a driving game, and have been scanning the reviews to try and establish which one would be 'the best' one to buy. As I cannot try any game before I buy them, I can only rely on the results of the various reviews in the Amiga magazines. If I were to do that, then I would assume that since *Lotus 2* scored higher than *Jaguar*, then it must be the better game, whereas you state that it is only better because it came out first, and that really Core's *Jaguar* was far superior!

In my opinion, the whole scoring system is basically unsound. By choosing to quote the score as a percentage, you are implying any game has been compared to a perfect example of its type, and scored accordingly. This cannot be true as no-one knows what makes a perfect game. It is quite possible that *Indy 4* will be even better than *Monkey 2*. If that is the case, how much will you award the game this time round. I would suggest a different approach to the assessment of games which would still present the reader with the chance to decide which game he wants to spend his money on, whilst still grading it against others to persuade publishers to improve their wares.

Why don't you adopt a two-tier

grading system, the first assessing each aspect of the software, the second keeping a league table so that relative merits and demerits could be assessed by potential buyers? For example, if I were to assess a particular game, this might be my submission:

Presentation	**Average**
Instructions	**Average**
Graphics	**Very Good**
Sound	**Good**
Playability	**Average**
Lastability	**Good**
Fun	**Great**
Price	**££££**

If the graphics are good, then they are rated 'Good', and if they are absolutely brilliant, they are rated 'Absolutely Brilliant'. I would then quote where in last month's games table the new game would be placed. Presumably, only the top ten or 15 games of any one type are important, and there does not need to be a standard to score the game against. This way, the game is rated on its own merits and allocated a standing against other existing games, rather than against some arbitrary 'perfect game'. Next month, the new table would be used for the next set of reviews.

G. L. Hague, Sandy, Beds.

MONKEY BUSINESS

I've just finished *Monkey Island 2* and, to put it quite simply, it's nowhere near as good as its predecessor. I drooled at the glorious PC shots and then, when the Amiga version was previewed, I drooled at them too. I read the news, previews and reviews, getting more and more excited. Finally, I managed to get my mitts on the game, installed it and booted up.

Everything appeared to be fine at first. I cracked a few puzzles, chuckled at some of the jokes and solved the first part reasonably quickly. But then I came to Part 2. Suddenly I found myself stumbling over a fairly large area without seemingly getting very far and – horrors! – I was feeling frustrated, an emotion entirely alien to the first *Monkey* adventure.

Then I started to notice the cracks in the gloss. I noticed the hiccups in the iMuse, the pathetic synchronisation between sound effects and animation and the sheer crudeness of some of the puzzles.

(WARNING! Plot details follow.) Give a banana to Jojo and the bartender objects, but make a mess by sticking it on his metronome and then nick his entertainer and he doesn't bat an eyelid. Huh? Having worked out the ship's horn, the flags and the drinks mix to win the spitting contest I was then punished by having to try out combinations of swishing and hacking and the like. Why? It seemed so unnecessary – maybe there is some peculiar, ancient American ritual to do with spitting of which we Brits are hopelessly unaware.

I admit that from LeChuck's Fortress through Dinky Island to the final confrontation with LeChuck there is a definite *Monkey 1*ish feel to it, but the ending? Oh dear, oh dear. Anti-climax of the year or what?! Not only was it downbeat, but where were the cameos that marked the end of *Monkey 1*? With a fistful of disks I expected more, especially as writers in magazines were supposedly sworn to secrecy about it. I felt as weirded-out as Guybrush and can only wonder if we are being set up for *Monkey 3* so that we can use the spare items and finally put paid to LeChuck. Here's hoping.

Steve Cooper, Somerset.

PRICE DROP

After years of owning all manner of Sinclair products, from the ZX81 to the +3, I finally succumbed to the lure of 16bit and gave in to the 'old enemy', Commodore.

I bought an A600 on H.P. from Dixons 3 months ago – just as they arrived in the shops. To say myself (31) and my three girls (7, 5, and 3 years) and my wife (ahem!) were pleased with it would be a GROSS understatement. It is now definitely the number one form of entertainment in our household (well, number one with the kids, number two with me and the wife!).

Anyway, to get to the point. I gave up smoking 30 cigs a day and saved hard for the deposit to buy this machine. I've been unemployed for over 2 years and you cannot claim on the social for a computer, so I hope you can understand my absolute amazement when, last week, Commodore announced.... a £100 price cut!!

What the hell is going on? I was expecting a £50 drop and a software bundle in the build up to Christmas, but this is ridiculous. I've skint myself at £35/month and a £40 deposit, only to be told that most of what I paid was unnecessary! I know what you're thinking – you've had the computer for the last 3 months so stop your complaining. The thing is, I feel like I've been had, and I bet I'm not alone in this.

I think Commodore should get their act together. They had obviously decided on the price drop the moment they released the machine. And now, the first people to support their new machine are the first to get ripped off. Thanks a million!

It was a series of machine launch disasters and corporate deafness that led to the demise of the old Speccy and nobody's market position is unassailable.

Picture this: Man walks into computer shop and buys an A600 at 5.25pm on a Saturday night. Same man walks past same shop on Monday morning at 9.30am and finds he has been fleeced of £100. It's a sad old world!

Philip Noonan, Runcorn.

I can understand your anger at losing out on the price drop. It's happened to me on more than one occasion in the past, but that's the price you have to pay if you want something badly enough. Commodore couldn't really bang their corporate drum when the machine was launched and admit that a price reduction was on the cards in the very near future – nobody would have bought it! You've got to feel sorry for the small independent retailers, too, who also got caught out. Many had already bought stock for this Christmas so few will benefit from the price drop unless sales dramatically increase as a result. Still, in the long term, I think we've got to applaud Commodore for gritting their teeth and slashing the price of their lead machine in response to the duel threat of cheaper PCs and the booming Console market. The £399 price point has been almost sacred to Commodore for the last few years, and to lop off £100 in one go is a fairly dramatic gesture on their part.

USEFUL UTILITIES

I have noticed how certain magazines have, within the last 6 months, started giving away full commercial utility packages on their coverdisks. In all this time none of the main computer organizations have ever complained.

What a far cry to when the same was tried with games! Then, as you may remember, a successful campaign ensured such actions were made illegal. Yet, as other people have said, there is proof that these covermounted games did not harm the industry as much as we were led to believe.

Look at *Kid Gloves*, for example. It still sold extremely well in the Budget charts even after being distributed on the cover of Amiga Power magazine.

Having failed with games, some of the mags are trying the same with utilities and – for now, at least – have been having a smoother ride. I wondered if there is a strategy behind this? In these troubled times not too many people can afford £100+ on the latest utilities and if they can buy them on a magazine at under a fiver they will. Thus they receive a wider audience and, in theory, a greater quantity of worthwhile stuff will be produced with them.

In turn, the PD libraries, magazines and commercial publishers are flooded with new (utility created) titles which leads to more choice for the Amiga-owning public. In short, everybody wins. Your views on this subject will, as ever, be gratefully appreciated.

Stuart N. Hardy, Sheffield.

There's no great strategy behind any of it. The fact of the matter is that most of the Amiga titles are locked into a circulation war and coverdisks are one way of increasing readers. Commercially-released games were banned from coverdisks mainly because the industry thought they would harm full-price sales. Luckily, productivity software doesn't come under the ban, so that's why some programs have been appearing on coverdisks over recent months. However, many companies are hesitant to sell their software to us, as they feel it's still got a more valuable shelf-life ahead of it. Whereas games software has a selling life of 3 months at full-price and a couple more at budget, productivity software can still clock up healthy sales a couple of years after its initial release.

Ideally, I'd like to go back to putting games on the coverdisks again as well, but ELSPA are refusing to budge on this point. Ridiculously, we even copt a telling off for putting *Pod* on last month's disk. Although it had been especially commissioned by us from Shaun Southern, ELSPA still felt obliged to slap our wrists as the game had originally appeared on the C64. This game was never likely to appear on the Amiga and I honestly thought we were doing everyone a favour by putting it on the disk. How wrong you can be.

PERV'S CORNER

Hello from the US! This letter is to enquire about the cover of your June 1992 issue regarding the two new Commodore releases ('Commodore's Double Whammy').

Julian Calverly's photos on your 6/92 cover and on pages 4 and 30 were great fun and a great idea! My computing friends and I want copies to hang over our Amigas! We hope there are shots or copies less closely cropped. Without knowing Mr. Calverley's address, I thought that perhaps I might pose my enquiry to you. Would it be possible to see some contact sheets from the photo session which produced your cover and to select some blowups, or even obtain some discards?

Anthony E. Keating, Washington, USA

I don't for one minute believe that this is a bona fide letter but, if it is, you're a very sad man!

ENTER THE DOMAIN

I am becoming totally sick of people saying games and commercial software are far too overpriced. This debate about piracy/expensive software has gone on far too long. Have these people (both sides) no eyes in their heads? Have they not seen the brilliant programs available in the public domain? Shareware? Freeware? You'd think that they worked and slaved all week just to go and buy the latest programs and were tired of having no money left. I have a large collection of PD software which has some extremely high-quality programs in it. You can find superb PD programs that rival commercial releases and most of it costs less than £2. If you're on a tight budget, you don't need to spend £100 on some flashy word processor. Go down to the local computer shop and grab a PD text editor for 50 pence. Another place to get great ➤

BACKCHAT

programs are coverdisks. I have heaps and heaps from CU and Amiga Format that are stuffed with quality programs. *Vista, Pagesetter,* not to mention *Sculpt 4D Jnr, OctaMed* and *Transwrite*. Wake up guys, you don't need to stretch your budget or rob a company. There's a world out there you're missing...

Ryan Jones, Australia.

I'm amazed that there are still people who totally ignore the Public Domain. There are some excellent pieces of software available at incredibly cheap prices. Why else do you think we devote so much space to it in the magazine?! Watch out for our annual PD buyer's guide, free with next issue's magazine!

COPYRIGHT CHAOS

I write with reference to the editorial opinion piece on page 178 of the August issue of CU Amiga concerning copyright violations by PD authors and distributors. It occurs to me that there exists a certain amount of hypocrisy around the issue. The authorities have chosen to single out a couple in possession of relatively few disks rather than a large distributor who would offer a much stiffer resistance. This couple face financial ruin and jail sentences while the rest continue trading awaiting a court ruling. I doubt very much if any large PD distributors will face such action. Even if the possession and distribution of such demo disks is ruled unlawful, distributors will merely be given the opportunity of removing offending disks from their collection. I also think that it is about time the Government and the courts reviewed their policy that ignorance of the law is no defence for infringement of it. I think that few lawyers or QCs could preempt the courts' decision so what chance does a small PD house have?

It also occurs to me that this copyright saga could be taken to ridiculous lengths. If, for example, the face of an actor cannot be used in a game unless he has given consent, then why should newspapers be allowed to print photographs of people who don't want to see their face in print? If a comedian tells a new joke then anyone who repeats it might be prosecuted. I hope it is clear that some sobriety of judgement should be exercised in alleged copyright violations.

D.E. Lewis, Burscough.

QUESTIONS, QUESTIONS...

I am getting very annoyed with the software houses and magazines that cater for the Amiga-owning market. I have a selection of questions and points which are laid out below:

1. Why don't some of the software houses (e.g. Ocean, Electronic Arts, Team 17, U. S. Gold, Virgin and Core) get together with a joystick manufacturer such as Quickshot and lay down a set of standards for a four-button joystick? It would be somewhat like the Super NES's joypad and would come in left- and right-handed, joystick and joypad versions. The softcos could provide an option in all suitable games for the joystick and they could make their games so that they are much easier to play with this joystck than with the other one- or two-button stick. I am suggesting this because the 16-bit console-owners have a much easier time playing games which, on the Amiga, require multiple combinations of direction and length of holding the fire-button down. For example, compare how easy it was to play *John Madden's Football* on the Megadrive than on the Amiga. Although the Amiga version was technically better, the Megadrive version's controls were much more instinctive.

2. I think that games publishers should structure multi-disk games so that you play through the first disk, then the second and so on, instead of playing through disk one then using disk three, then two, then back to one etc. They should also be able to be installed on a hard drive, as it is not hard to write a small script file to copy the files from floppy to a (user-specified) place on the hard drive.

3. All games should be play-tested for a lot longer and come

THE PC THREAT PART 3

The PC vs Amiga debate has prompted the most mail we've ever had on one topic. We've received more than 70 letters so far on the subject, so it looks like we'll be covering your views for some time to come. Here's the latest selection of letters...

SATISFACTION

I use my Amiga for word processing and page layout. I also dabble occasionally in music making and graphic creating. I'd just like to say that I'm more than happy with the capabilities of my A500Plus and feel no urge to go out and buy a PC, just because it offers greater screen resolution, more colours and is a lot faster. My computer can do everything I want it to do and in a very user-friendly way. Why should I change? I think this Amiga vs PC debate is pointless – it's just a case of the end-user deciding on his priorities and to what uses he wants to put his computer to. Having the latest, greatest super machine is pointless if you're only going to use it for very basic tasks. And why pay the earth when you can buy an Amiga?

John Donald, York.

NOTHING COMPARES 2 U

First of all, the Amiga 500 is not made to compete against 50MHz 386 PCs with super-VGA and the like. If the 500 had a hard drive as standard, a 25MHz 68030 processor, 16-bit sound and 24-bit graphics, how much do you think it would cost? Most of the people who buy 500s use them for games, and maybe write a letter occasionally in a word processor. Do you think that it is worth buying such an expensive machine just to do that? And let's say the machine cost the same price as now, most people wouldn't even use a tenth of its potential.

As for the 1500 and 2000, they are built to expand. Sure, most of the machine is taken up by expensive slots, but that's the whole point! You don't buy a 2000 and just leave it like that. And as for faster processors being standard in 2000s, there is already one with a hard drive and 68020 processor in it called a 2500. Personally, I don't think it is worth getting an accelerator unless you're into professional video work, ray-tracing, 24-bit graphics or the like. I have seen the difference between a 50MHz 68030 and a standard Amiga. To tell the truth, there isn't a lot of difference. The only exceptions being *Real 3D* and *VistaPro* racing along at seven zillion times faster than normal. Workbench still runs in the same speed, as do *DeluxePaint* and most other programs.

In the sound department, there isn't a lot to be said. The Amiga simply cannot be beaten. I don't see any records being released using only PC sounds?

Also the Amiga can do something the PC cannot and that is run an unlimited number of programs at the same time (multitask). Sure, the PC has Windows, but have you ever tried to run two programs at once using it? Don't try. Even with only two programs running at the same time, the machine slows down to half the speed (and that's on a 20MHz 386 PC). We have a PC at home so I should know (not that I've used it since I got my Amiga). At the moment I have *Protracker* running, playing music, while I write this letter in *Transcript*, to import into *Pagestream 2.2*, which I also have running in the background. And wth no apparent lack in speed! The day you can do that on a PC, I will rush out and buy one...NOT!

There is also one thing that is very important, and that is ease of use. Here is one area where the Amiga cannot be beaten. I consider myself a very experienced computer user, yet it took me several hours to install a program on the PC. On the Amiga, it would be done in a matter of minutes. Now that says a lot!!

Thore Bjerklund, Norway.

FLIGHT TO NOWHERE

I was most interested by the two letters printed in the August issue under the heading of the 'PC Threat'. As an A500 owner with a great interest in flight simulation I would have to say that I agree whole heartedly with both writers and, yes, I'm panicking too! The PC has now totally overpowered the basic Amiga in this field and has the support of all the major software firms when it comes to serious entertainment software, something the Amiga most certainly does not.

While, undoubtedly, the A3000 is the PC's equal in nearly all respects there are simply not enough of them about to persuade companies to produce software for the higher end Amigas. Programs such as *Falcon 3, Secret Weapons of the Luftwaffe* and *Aces of the Pacific* will not appear on the Amiga. Although most firms have shown plenty of support for the Amiga in the past, it is simply impossible to adequately convert such large, complex, processor intensive games onto an A500. This is the problem: the A500 is the Amiga market and good though it is, it is simply underpowered for today's flight sims. *Red Baron* is a prime example. No doubt this is a marvellous game on an accelerated machine with a hard drive, but on an A500 it is very poor. The press have slated it. I doubt very much whether sales have been good, and consequently Sierra have no plans at all to convert *Aces of the Pacific*, a game i would happily kill for. *Links* is a good example of what can be achieved on an Amiga but again a hard drive is required and a 16 MHz processor recommended.I personally think the way forward is shown by GVP with their new A530 hard drive/accelerator combo. If a similar device could be produced at a more tempting price (perhaps with only a 25MHz chip) then maybe enough A500 owners could be persuaded to buy such a unit to create a reasonable user-base of Super A500s capable of tackling the top class simulations. This should then persuade the software houses to reconsider their current lack of support for the machine.

Of course, it's all chicken and egg stuff. Who would produce such a unit without an assured market and who would buy it without the software to exploit its potential?! Certainly no-one would write for it before the market is actaully there. The only real answer to this is for Commodore themselves (if they can get their heads out of the sand) to get involved and give incentives on all sides to get the ball rolling. Once it does I'm sure we could give the PC a run for its money. If, however, no-one is prepared to do anything then my advice to anybody considering buying a computer for the same purpose as me is to damn the initial expense and get a decent PC. I will hold off for as long as I can but I feel it is inevitable that in the not too distant future I will have to trade in my Amiga for a PC.

David Glynn, Newcastle-upon-Tyne.

SUPER-MACHINE

I have noticed a spate of letters of late bemoaning the fact that both Commodore and Atari are in danger of being superceded by the PC. I thought I'd add my own comments to the debate, some of which are probably not going to be very well received, but c'est la vie. I have five years experience in the professional computer market and I am currently a middle manager in an international computer reseller, while owning both an under much more stringent quality control. This would eradicate problems such as those found in *Epic* where the manual has sections such as 'a particle is *FILL IN LATER*' and the game's logic crumbles if you fail the first mission.

4. Why has the *Addams Family* got such brilliant reviews? It is much worse than *Fire and Ice, Zool, Rainbow Islands, Sonic* and *Mario IV*. The use of the fire button to jump smacks of lazy coding as it must be easier to just convert the jump mechanism from the Super NES version than to actually use the Amiga joystick's up direction. The problem with this is that Amiga-owners are used to using up for the jump and in the (very rare) moments of excitement, it is all too easy to push up instead of pressing fire.

5. Why aren't coders such as Magnetic Fields, Bitmap Brothers, Team 17 and Graftgold etc used by the big companies for the development of licensed games? I'm sure they could do a lot better than the in-house programmers who generally churn out the same old thing for licensed games. Take Ocean for example, they used to churn out games that had beat 'em up, shoot 'em up and puzzle sections, but now they're churning out platform games e.g. *Hudson Hawk, Addams Family, Lethal Weapon III.*

Daniel Morgan, Sidcup.

Let's take your questions one at a time.

1. US Gold are in the throws of producing just such a stick for use with their upcoming *Streetfighter 2* conversion.

2. I completely agree, nothing irks me more than repeated disk swapping.

3. Too many games get released that are full of bugs. Although it's impossible to certify that anything is 100% bug free, I do think that quality control is not what it used to be. Mistakes in manuals are unforgiveable as far as I'm concerned.

4. I agree with you on the *Addams Family*. That might surprise you, as Steve Merret voted it a Super Star when he wrote our review. Subsequently, I've had a look at the game and cannot see what Steve saw in it. Still, editorial independence and all that – everybody is entitled to their views. My current favourite is *Zool* from Gremlin – an excellent game that should go straight to the top of the charts when it's released.

5. Top teams are rarely recruited to work on license games. The licenses themselves cost so much money it would be commercial suicide to then employ one of the top creative teams as well.

CD PRICE WAR?

Now that Commodore have finally released the A570, I wonder if we can expect to see the high cost of Cd discs to come down. Since the launch of the CDTV, disc prices have been astronomically high and have probably put off many people buying a system.

I really cannot see any justification for the high cost of CDs. Let's face it, if a game comes on two or more conventional floppies, then theoretically at least, a CD should be the cheaper alternative. CD discs can be pressed for as little as 59 pence these days whereas a floppy costs roughly 30 pence per disk. Okay, so you could argue economy of scale, but I think a lot of Amiga owners will either take advantage of the CDTV upgrade offer or buy the A570. Hopefully, if this is the case and CD sales take off, we can expect the price of CD-based software to nosedive. It may be a pipe-dream, but I hope it happens.

Paul Badkin, London.

It might already be happening, John. Renegade have just announced that they will be releasing their number one hit, *Sensible Soccer* on the CDTV for only £19.99. Let's hope more companies follow suit.

BACKCHAT, CU AMIGA, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU

STe and a CDTV with keyboard and disk drive. That qualifies me to have at least a balanced opinion.

First off, let's take a look at the technology/price ratio. Many have commented that the price of the STe and the Amiga 500Plus/600 are too high when compared to 386PCs. This may, on the face of it, be true. For a long time, Atari and CBM had the best home computers on the market – stereo sound, wonderful graphics, blitter chips etc, and a price most people could afford. However, PCs have to a certain extent caught up and even in some cases surpassed the proprietary systems from Atari and CBM. This is because of the falling price of Intel processors and because the PC world latched onto the concept of multimedia, forcing the giants to incorporate better sound and graphic capabilities into the basic design. It is now possible to pick up a decent 386SX 25MHz, 4Mb RAM, 52Mb Hard Disk, 1.44Mb floppy drive and S-VGA monitor for under £1000!

A similar package on the Amiga and the STe would also cost about £1000 but without the monitor. So the obvious thing to do would be to cut the price of the STe and Amigas, right? Wrong. Unfortunately, these two companies suffer from economies of scale – they would have to sell far more units to be able to bring the prices down. Sure, you could argue chicken and egg, that low prices would bring more sales and thus eventually not only would Atari and CBM regain the lost margin but also have higher revenues and bigger profits, but we are firmly in a depression (not a recession, folks!). What if the vast increase in sales doesn't happen? Would you take such a gamble? No, of course you wouldn't. So the price of the units will not decrease by any great amount, certainly not like the fall in PC prices.

However, if you look at the software, this is where great savings can be made. How many decent WP, DTP, spreadsheets or data-bases below £150 are there for the PC? Not many. Then look at the vast selection of PD and shareware for the Amiga and STe. Much of it is better than many off-the-shelf PC products! And I should know – one of my functions used to be evaluating new products.

The next point is that the sound and graphics capabilities of the PC has overtaken the STe and the Amiga. But wait, what's this, new Atari and Amiga product with new screen resolutions? What's more, the new machines have supposedly better-than-CD-quality sound, DSP chips (like the NeXT uses) and the good old Motorola chip which, incidently, is specifically designed to handle complex graphics unlike the Intel chip.

Well, what about speed differential? Speed is a fallacy, folks. It's one of the few concepts computer salesmen understand and that's what they push. They don't mention the ease of use that the Amigas and STs have (Windows? Don't make me laugh!), and therefore all that time saved through faster understanding of how to work both the computer and the software. They also don't mention the versatility of the machine. Could a normal 386SX effectively splice music and video together, and so easily that my dad could learn how to do it in a day? No, actually, it couldn't – not without extremely expensive modifications! The fastest machine in the world is usless if the user has to consult the manual every half hour.

So, given that we've effectively argued the pricing and technology issues away, what should CBM and Atari be worried about?

Quite simply, the superior marketing forces of the PC comapnies. They've got it sussed, and both Atari and CBM have their heads in the sand if they think the odd TV advert at Christmas is going to win them a significant share in the market. When it comes to customer relations, let's be polite and say that the two companies are lacking. And how about a decent upgrade policy for those who aren't afraid of new technology and make the initial investments? WAKE UP!! You need to look after the people who bought the STe and CDTV while the teething troubles were sorted out – at least offer them the chance to have a cheap upgrade!

Both CBM and Atari need to work closely with the developers, especially with hardware manufacturers like hard disk developers, and see about bringing lower prices to those areas.

There's one other thing that the two might like to consider. This is a radical suggestion and I know it could never happen, but why don't CBM and Atari join forces and produce a joint platform? Even better, a joint platform that is compatible with both the Atari and Amiga software of today! And yes, I know all the STe-exclusive users are saying we don't need CBM and all the CBM-exclusive users are saying what could Atari possibly bring to the party? Well guys, take a closer look at the STe and the Amiga 500 Plus – there ain't much difference (although the games software development on the Amiga platform is ahead of the STe it has to be said!). Take a look at the Falcon, the A3000, the TT and the CDTV. All excellent products, all technological dreams, all destined for the also-ran pile unless Atari and CBM do something drastic to steal the momentum from the PC.

Wouldn't a joint platform machine be AWESOME!? Oh well, I can dream, no harm in that.

At the end of the day, the future of the Amiga and STe lay in the hands of CBM and Atari. Instead of looking enviously at the PCmarket, end-users should tell them to get their fingers out, develop new, stable product, offer better and more generous support to the users, including a good upgrade policy, and market it effectively.

Darren Smithson, Reading.

THE AMIGA'S DEAD? LONG LIVE THE AMIGA!

About 8 months ago I bought an Atari STe 1040. Recently, advertisements in my area have been offering the Amiga A600 for £299.99. Couple this with the growing paranoia within the ST world over the supposed 'death of the ST' and the temptation was too much to refuse so I took the plunge and bought an A600.

Having struggled with the STe, the Amiga 600 was a revelation. Ease of use, superb graphics and sound, and the Amiga Workbench was so pleasing to my aesthetic sensibilities after the monstrosity that is the ST Desktop.

The letters in your column mirror the constant dronings which now litter the ST mags. The frequent cry of the ST fanatics is 'why are the software companies producing less games for the ST', yet in the same breath they accuse the Amiga of being a glorified games machine. Glorious yes, but glorified? No way. Maybe, as a wide-eyed and breathless newcomer, my enthusiasm is getting the better of me (or maybe D. Walker and M. Badkin are spoiled, jaded and cynical), but I find the gaming potential of the A600 the final icing on the cake.

To witness Amiga owners griping in the manner of the much maligned ST owner is inexcusable.... one only has to walk into any software shop to see that the Amiga software far outnumbers any other type.

You can now pick up an entry level 386 for around seven hundred pounds, but if you want the sound capabilities of the Amiga, you are going to have to fork out over another hundred for sound cards etc. Come on... the slickest and sexiest computer around for under £300 is the Amiga – there isn't any competition at all.

The Amiga is still a hugely popular street level machine. The buzz about the A600 is phenomenal and despite the sneering by the PC purists, the overall popularity of the Amiga continues to grow.

Ian Baker, Cleveland.

CLUB CALL

If you want to get the most out of your Amiga, why not join one of the many clubs that exist to help you do just that? If you've got a problem that needs solving, want to buy hardware or software at cost price, or just want to converse with fellow enthusiasts, there's a club somewhere near you that can help.

CHIC COMPUTER CLUB

**PO Box 121, Gerrards Cross,
Buckinghamshire, SL9 9JP. Tel: 0753 884473**

Ten years old this year, the Chic Computer Club aims to provide a comprehensive computing service for its many thousands of members. Run on a non-profit making basis the club is divided into a number of sections, each one aimed at a specific user group. The one of most interest to CU Amiga readers is undoubtably STAMP which stands for the ST and AMiga Personal computer group. You can either opt for the standard two year subscription currently standing at £12.95 or choose the five year Gold Star' deal costing £24.95. Not only will you be instantly put in touch with hundreds of fellow Amiga enthusiasts, but you'll also receive a special twice-a-year fanzine plus a whole host of other services. These include heavy discounts on computer peripherals and software, a vast PD library, a repair and spares service, a second-hand software sales scheme and a second-hand library where members can hire software for a limited period or rent out their own programs to earn some extra cash. There's also a huge selection of books and manuals up for sale, the aforementioned fanzines, a contact group and a questions and answers helpline.

It seems to be run to near-professional standards and the opportunity to become involved in the running of the club is ever-present. The latest STAMP fanzine is nearing completion and offers the first installment of a 68000 machine code course, an AMOS section, an Amiga softwares collector's guide and lots, lots more. For further information, ring the club's organiser, Steve Winter, on the above telephone number.

AMIGAMANIA

88 Blackbull Road, Folkestone, Kent, CT19 5QX. Tel: 0304 375311

Aiming to emulate the success of JAM magazine, Dave Cryer started Amigamania more than a year ago. Although he's got off to a slow start and only managed to attract 18 members so far, the club does show a lot of promise. For only £10 annual subscription, members receive a bi-monthly newsletter which, from the October issue, will be a massive 32 pages. This will include productivity and games reviews coupled with readers letters, a questions and answers forum and other Amiga-related goodies. The club offers an extremely comprehensive PD library, covering games, productivity software and the Fred Fish collection.

Amigamania strikes me as a grass roots club full of enthusiasm and energy. Given the right degree of support, I'm sure it could flourish and turn into one of the better Amiga user groups.

THE HARLEQUIN GROUP & MACCLESFIELD COMPUTER GROUP

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Macclesfield, Cheshire SK10 3NP.
Tel: 0625 429667**

The Harlequin group meet every Tuesday night at the Harlequin nightclub (what a coincidence – same name!), 68 Chestergate, Macclesfield, Cheshire. The group is now 85% Amiga users plus PCs, STs etc making up the remainder. They are a serious group with DTP, DTV, art, music and programming interests, but all members enjoy games. Club facilities include a video wall and various equipment that is loaned to members in the week or used on the night.

The group has been going for almost 10 years and produces a newsletter, organises low cost show trips, runs a PD library and offers a series of discounts on software/hardware. Members also contribute to the Harlequin video art PD disks and Harlequin help cards which were featured in a recent CU Amiga.

HEREFORD AMIGA GROUP

Alma Cottage, Allensmore, Hereford, HR1 4LU.

With an ever-fluctuating number of Amiga users, the Hereford Amiga group cater for a wide range of interests ranging from games players to professional users. The guiding principle of the club is to help Amiga users get the most out of their machines. As far as activities go, the group offer a high quality printing facility, audio and video digitising, a tuition service on most aspects of the Amiga, a technical help line, and a product testing and feedback service. There are also ambitious plans to publish a number of guide books to various programs and applications.

READING COMPUTER USERS GROUP

**19 Knollmead, Calcot, Reading, RG3 7DQ.
Tel: 0734 410597**

You don't even have to own a computer to become a member of RUG, the Reading Computer Users Group, but I suppose it would help if you did. The group meets on the first Tuesday of every month at Leighton Park School from 7.30pm onwards. Each meeting has a theme to do with computers and these have ranged from adventure games to word-processing in the past. Anyone who is interested in joining the group is most welcome to attend – just turn up on the night or contact the club's secretary, Mike Mallet, at the above address. Next meetings: 6th October, 3rd November, 1st December.

WREXHAM & DISTRICT COMPUTERS CLUB

**3 Ffordd Elfed, Rhosnesni, Wrexham, Clwyd,
LL12 7LU.**

The WADCC allow people with any make of computer to join the club, although the vast majority of them are Amiga owners. The club meets most Thursday nights at the Memorial Hall, Wrexham. Ample parking is provided in the Wrexham Baths car park. The club opens around 7pm and closes at 9.45pm (approx). The club sells sweets, chocolates and drinks as well as computer accessories such as blank disks, disk boxes and mouse mats – all at competitive prices.

The Amiga library has more than 600 disks of top quality programs and members can loan computer hardware if necessary. The club currently owns two printers, a modem, hand scanner, genlock and sound sampler. These are available to members to take home free of charge! There's also a video and book library and a PD service. Membership costs only 10 pence (!!) and entry on the night a very reasonable 50 pence.

IN TOUCH AMIGA

**65 Meadowside, Lingfield, Surrey, RH7 6BY.
Tel: 0342 835530**

ITA is a bit like a classified ads sheet on disk. There's something like 200 advertisers each issue offering all sorts of things to do with the Amiga. What's even more interesting is that it doesn't cost anyone to advertise. There's no membership fee, either! The only cost to advertisers is the 95p for the original disk. This can then be updated the next issue for only 40p plus and SAE. This disk-based club has real possibilities and I can see it really taking off.

Copies of the disk are sent all around the world and the international membership is growing in leaps and bounds. If you've got some gear you want to sell or are looking to buy some second hand hardware, then this is the place to look. It's also the place to sell or buy commercial software or PD games and utilities. Do yourselves a favour, and get in touch with Pete Allan, the organiser.

GET IN TOUCH!

**If you run a club specifically aimed at the Amiga owner, get in touch. We'll promote your club through these pages, as well as provide a free subscription to CU Amiga. Send all entries to:
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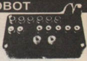

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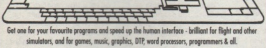

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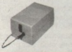

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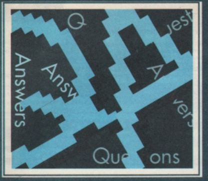

If you've got an Amiga-related question or problem, Mat Broomfield has the answer.

I'd like to start this month by thanking everyone who's written in, especially those people who have comments to make or advice to offer. Your letters are all greatly appreciated. Many letters start out with compliments to the magazine, which of course we're happy to receive. For those of you who've asked why I don't print them, the answer is twofold: 1. It would seem really big-headed to begin every other letter with a compliment. 2. You'd sooner read the answers to more questions than reams of praise!

My mail bag seems to be getting fatter each month, and obviously this means that I don't get to answer every single letter in these pages. I do try to answer the urgent-looking ones immediately, but please remember, just because you don't get a reply this month, doesn't mean I won't respond in a future issue.

I'd also like to take this opportunity to remind you that no problem is too small or too silly for me to deal with. After all, we all have to start somewhere!

FONT EXTRAS

I've been told that it's possible to buy additional fonts for my Citizen Swift 24. Is this true, and if so, where can I get them from?

David Broach, Benchley

You can buy additional font cartridges for £41.13 each. They're available from Silica Systems, 1-4 The Mews, Hatherly Road, Sidcup, Kent, DA14 4DS. Tel 081 302 8811.

CDTV QUESTIONS

I've read a lot of hype about Commodore's CDTV, but have been unable to find out much about its basic specifications. I'm seriously interested in getting one, but is it really any good, or is it just a CD player stuck on the side of an A500?

I know that Commodore are trying to play down the computer part of the machine by calling it 'A family entertainment centre', but some of us want to know about this aspect of its abilities.

1. How fast does software load compared to a normal floppy drive or a hard drive?

2. What are the graphics like on a normal TV set? Are they much better than the A500?

3. How much RAM does it have, and is this expandable?

4. How much chip RAM can it handle? If not much, do you foresee any problems arising as a result of this?

5. I've heard that a number of A500 games won't work with the CDTV, why?

6. How fast is its processor chip compared to the A500?

7. From what I've heard the remote controller for playing games is crap. Is there an alternative?

8. Is it possible to expand the CDTV into a work station complete with keyboard for DTP, word processing, music, etc. I ask this because of Commodore's attitude towards the word 'Computer', acting as if it's a dirty word where the CDTV is concerned, which is strange considering that computing is their business.

9. Is it possible to connect the CDTV and a normal Amiga up to each other?

10. What do you think the CDTV should realistically be selling for?

P. Ebbans, Walsall, West Midlands

I don't know the CDTV's exact loading speed, but it's slower than a decent hard drive and a bit faster than floppy disk. Essentially, the CDTV is an Amiga with a high capacity CD player; its graphics are exactly the same as the A500's. However, thanks to the massive storage capacity of the disks, there is the potential for graphics that would have proved too expensive in terms of disk space for an A500.

The CDTV has one Meg of chip RAM, internally expandable to two. I don't foresee this causing any problems that don't already exist on the A500.

Its processor runs at 7.14MHz, the same speed as that of an A500 Plus (whose operating system it shares).

You can use ordinary mice and joysticks with the CDTV, and there are a range of additional peripherals such as monitors, disk drives and keyboards available for it, letting you turn it back into an A500! Alternatively you can connect it to an A500 using a PD program called Parnet.

It's true that Commodore did seem to forsake their die-hard computer users by trying to pitch the CDTV as something it wasn't. In my opinion, this has rightly backfired on them because the ordinary public weren't interested in it, and computer retailers felt betrayed.

Many computer users are bored with hearing the CDTV talked about in almost reverent tones, not to mention the comically late CD-ROM drive. Many have perhaps come to suspect that, based on the currently available crop of software (*Fred Fish Collection*, *Lemmings* and *Sim City* excluded), it's not worth spending £100 on, much less £499!

NEWCOMER'S QUESTIONS

As I'm relatively new to the Amiga, I was hoping that you could help me out with a few questions?

What exactly is a hard drive, and are they worth buying for the average games player?

Following advice to make back-ups of all my original games before playing them, I've come across a number that don't seem to be copyable. Is there any way to overcome this because I don't want to have to fork out even more cash if they become damaged?

What is the RAM disk on Workbench, and how do I use it?

Can you suggest a reasonably priced word processor?

A.J.Coulson

A hard drive works in a very similar way to a floppy drive, except the disks are not removable. A floppy disk is made of flexible plastic coated with various ferrous alloys. When they spin inside the drive, a tiny read/write head actually touches the surface of the disk and information is transferred to or from the disk. A hard disk is made of rigid material, often aluminium, and again has a ferrous coating. Unlike a floppy disk, the read/write heads don't actually touch the surface of the disk. Instead they float above the disks on a cushion of air narrower than a smoke particle. Because they don't touch the disks, they can spin faster, and information can be transferred more quickly. Often hard drives contain many disks stacked on top of each other, each with their own individual read/write heads. Generally speaking, the higher the capacity of a hard drive, the more disks it has.

The main advantage of a hard disk is its increased speed and storage capacity. This is useful to games players as well as everyone else, but unfortunately the majority of arcade games can't be transferred onto hard disk, although most worthwhile strategy and adventure games can.

You couldn't back-up some games because they were probably copy protected, i.e. made back-up proof. There are commercial copiers which will allow you to make back-up copies, but their use is frowned upon by the games industry. If one of your disks should become damaged, most games companies will replace it for a small fee (between three and five pounds).

The RAM disk is an area of volatile RAM that you can read and write data to as if it were a floppy disk or hard drive. Volatile means that anything you store there will be lost if you turn the power off.

There are many reasonable word processors available, including *Scribble!*, *Kind Words 2*, *InterWord* and *Quick Write*. *Scribble!* is very basic, but easy to use, *Kind Words* lets you include graphics, but can be a bit annoying, whilst *InterWord* and *Quick Write* are more comprehensive and a little more expensive. You pays your money, you takes your choice!

OKAY OKI

I have just been given an ICL/OKI Microline 192 printer, minus its cable. It has both serial and parallel interfaces at the back, and I'm told that it's IBM compatible. Can I use it with my Amiga? Do I need a parallel or serial cable? Which printer driver should I use? Is there any difference between the performance of different word processors as regards the printer?

P. George, Thornbury, Bristol

Yes, you can use the printer with the Amiga, and I would use the parallel interface. Simply go to Dixons or any computer shop and ask for a standard parallel printer cable.

As for a driver, I suspect that the Okidata 92 driver on the Workbench extras disk will work in all modes, although it may produce a resolution far below the capabilities of the printer. The generic driver will also handle text.

Generally, there is no difference between word processors as they aren't written with specific printers in mind. Having said that, *Word Perfect* does in fact have a specific driver for your printer, and would presumably render the best results.

Does anyone else have this printer hooked up to an Amiga? If so, what driver are you using, and does it handle graphics?

CODING CONTRADICTION

In the June issue, John Miller asked about the suitability of Pascal for writing games. You said that Pascal was not capable of handling the sound and graphics and would only be suitable for writing strategy games.

Admittedly Pascal was not designed for writing games, but then neither was C or Basic. However, the Amiga was designed as a games machine and consequently extensions have been made to all three languages on the Amiga. Few programmers who have experienced Pascal (or C for that matter), would consider going back to Basic. Therefore his choice boils down to Pascal or C.

As John is familiar with Pascal already, he might like to consider buying *Highspeed Pascal* from Hisoft, which is as powerful as any of the commercial C compilers. The only problem that he would encounter with Pascal is that, to date, all the examples given in text books are aimed towards C programmers, and are therefore written in that language.

His other alternative is to buy *SAS* or *Aztec C*, and learn a whole new language. As John is already familiar with Pascal, he shouldn't have much trouble using C instead.

Colin Yarnall, Wilmslow, Cheshire

Thanks very much for your comments, Colin. If John is reading, hopefully your letter will enable him to make a more informed decision. To a certain extent, I still stand by my original comments. Although Pascal may have been adapted for use on the Amiga, it isn't designed with large-scale bitmaps or sound samples in mind.

You yourself made a more important observation though. John may already be familiar with Pascal, but the Amiga is geared towards C and 68000 machine code. There is a wealth of tutorial material available for these two languages, and even *Microsoft Basic* and *AMOS Basic* are fairly well covered. As most programmers seem to agree, the difficulty with learning new languages on the Amiga is not in mastering the language itself, but rather in how it interacts with the Amiga's immensely complex internal architecture.

Perhaps John could persevere and write his football game using Pascal, but he'll find it near impossible to locate other Amiga Pascal games programmers to help him find his way around.

At the end of the day, there is nobody, to my knowledge, using Pascal to program Amiga games, arcade or otherwise.

STICKY SHELL

I'm totally useless on the Amiga and what I'm about to ask is probably really basic but please help.

When using CLI or Shell, I can't use any other disks. No matter what command I type, I keep getting told to insert the Workbench disk again. I can't get the computer to do anything when there's another disk in the drive (even blanks or the Extras disk). I don't have an extra drive, so what am I doing wrong?

Craig Smith, New Zealand

Far from being a stupid question, your problem is in fact one of the most commonly encountered by people who are not familiar with the way that Shell and CLI works.

Every command that you type into the CLI window has to be loaded from the Workbench disk first. Therefore, if you insert another disk, then type a command such as DIR expecting it to be performed on the new disk, you're in for a disappointment. CLI will ask for the Workbench disk to load the command, and will usually perform the command upon the Workbench disk.

There are two ways around this problem. The first is to refer to the disk you want the command performed on by name. For example, supposing you want to find out the contents of a disk called FRED. Simply type LIST FRED: <return>. Notice the colon (:) after the disk name. This is crucial because it tells AmigaDOS that this is the name of a disk, and not a directory (drawer) of the current device. The computer will still ask for the Workbench disk so that it can load the List command, but it will then ask you to insert the disk called FRED, and perform your command as expected.

The other alternative is to copy all of the required commands into RAM: (memory) and assign them so that the computer no longer needs to load them from disk. Suppose you want to use the DIR command on another disk, type COPY C/DIR TO RAM: <return> COPY C/ASSIGN TO RAM: <return>. This copies the DIR and ASSIGN commands into RAM. Now type ASSIGN C: RAM: this tells the computer to look in RAM: for any C commands. Of course, if you now type any command except ASSIGN or DIR, the computer won't be able to find them. When you've finished using the DIR command (or whatever), type ASSIGN C: YOURWB:C <return>. Substitute the exact name of your Workbench disk where I've typed 'YOURWB'. Now you know why you also copied the ASSIGN command into RAM!

EXTINCT AMIGA?

I'm becoming increasingly worried about the future of the A500. How long is decent music hardware and software likely to be produced for it? Is it feasible to upgrade an A500 to a virtual A600, and if so, how?

Alternatively, if I keep my 500 and decide to wait and buy the new Amiga (A800?), could I connect them together via *Aminet* or a similar network?

On a different subject, what's your opinion of *Sound Master* as a semi-pro sampler? How does it compare to *Audio Engineer Plus* if I buy *Dr T's KCS*? Is it compatible with external RAM upgrades? Finally, is it possible to buy instructions for *MED* or any other PD music packages?

Gawain Hewitt, Norwich, Norfolk

With over one million Amigas sold in Britain alone, the bulk of which are A500s, I don't think you need to worry too much about its immediate future. Mind you, if the new Amigas turn out to be as good as they're rumoured to be, perhaps you won't *want* to keep your 500!

I know that there are a number of companies currently working on exciting new music products for the A500, including new 12 and 16-bit samplers, and a very promising range of cut-price MIDI software.

As for upgrading your 500 to a 600: two of the main differences between them are the 600's PCMCIA card slot and its 2.0 operating system. You can already buy a complete 2.0 upgrade for about £200, and there are apparently two companies working on PCMCIA adaptors for the 500. Needless to say, you can already add hard drives to the 500 without much trouble.

I can't guarantee that the 500 and 800(?) will be compatible enough to connect serially, but I would say that it's extremely likely that you will be able to link them.

I'm not at all sure what you mean when you mention *Dr T's KCS* in the same breath as *Sound Master* and *Audio Engineer*. *KCS* is a MIDI sequencing package, and neither sampler supports MIDI in any way.

I myself use *Sound Master* which I can heartily recommend for all types of use from amateur dabbling, right up to commercial sampling. It can make use of all extra chip RAM, or it can sample straight to disk. It is only an 8-bit sampler, so the quality is not as high as it could be, but in modern dance music, 8-bit samples are commonplace. It's the best Amiga sampler I've used, although to be fair, I've never used *Audio Engineer* or any 12 or 16-bit devices. The best thing about *Sound Master* is the fact that you get the superlative *Audiomaster 4* software free with it.

If you've been buying CU since June, you will have noticed that we've been running a very comprehensive *OctaMED* tutorial in the blue pages. If you prefer, you can buy a manual for earlier versions of the program direct from Amiganuts. Most PD music programs are supplied with instructions on the disk somewhere, usually in the Docs directory.

MASTERING MACHINE CODE

I've recently purchased a copy of Hisoft's *DevPac* because I'm interested in

Questions
Answers

learning to program in 68000 assembly language.

Unfortunately, I have been unable to find any good tutorial books on the subject. Can you help?
Richard Moore, Hale Barns, Cheshire

There are many books on Amiga machine language, among which the Abacus ones are probably the most popular. You should be able to order *Amiga Machine Language* from your local book shop.

You will soon realise that a single tutorial book is not enough, and you're almost certainly going to need some sort of additional reference books. The *Rom Kernal Manuals* (*RKM*s) go into great detail about the Amiga's internal operating system and architecture, and one or more of these books will be absolutely essential.

ARDENT ANIMATOR

It was with immense excitement that I read your new video round–up column, where you reviewed *The Mind's Eye* from Miramar studios. I instantly decided to try and get my hands on a copy, until it occurred to me that the US uses a different video signal to us.

Is there a version available which will work on ordinary British VCRs? Can I purchase a copy through CU Amiga, or is it alright to order direct from Miramar?
Matt Jones, Caerhun, North Wales

The United States use an NTSC display, whilst Britain and Europe use the Pal format, and unless you own an NTSC video and TV, NTSC stuff is useless to you...

Which is why it's just as well that Miramar have thoughtfully produced Pal versions of their awesome *Mind's Eye* video for European users. Unfortunately you can't buy it via CU, but Miramar assure me that it is to be distributed throughout Britain and Europe. In the meantime, you can order direct from Miramar in the US, but you can expect postal charges which will add as much as another $10-20 to the price. Write first for details.

CLOCK SOLUTION

I was reading your April edition when I noticed that Miss L. Keown was having problems with her battery backed clock. I had a similar experience. I had used a utility to set the clock but afterwards, on powering up, the computer reported that it could no longer find it (the clock).

After having checked both the clock and its connections thoroughly, I opened a CLI window and typed SETCLOCK RESET. This command resets the clock after a rogue program has turned it off or set the test bit. Bingo, the clock reappeared again!

Although you were probably right in suggesting that she didn't have a clock, I thought that this might offer her another solution.

On the subject of C64 emulation: I was wondering if any of your readers can recommend an emulator that works well with games as well as Basic programs?

If you can believe their literature, the *A64* package from Questronix sounds good, but I'm reluctant to send off the licence fee without confirmation.

Incidentally, if it doesn't contravene the copyright laws, is there any chance of printing a wiring diagram for a *1541* interface lead?
James Murray, St Leonards, Western Australia

Thanks for your advice with the clock. I wasn't aware of the Setclock Reset command, so perhaps that will be the answer to Miss Keown's problem.

Sorry, but I don't know anything about C64 emulators or disks drives, but perhaps there is a fellow reader out there who is able to help? If so, please write in to me at the usual address.

PRINTING SERVICE

In reference to Mr Gosling's plea for someone willing to print out his W/P documents, I am more than willing to do it for him, in return for appropriate remuneration.

In fact, I would like to extend my services to any readers who require documents or monochrome art printed.

As the proud owner of a Canon BJ-10ex, I can offer near-laser quality and a resolution of 360 DPI. Anybody who is interested should phone to check prices *before* sending any work.
Chas Dainty, 11A Love Lane, Woodford Bridge, Essex, IG8 8BH. Tel: 081 505 4217.

READ/WRITE ERRORS

I keep getting read/write errors when saving animations from *D-Paint 3*. I sometimes encounter a Dos 10 error, too. This is very frustrating since it spoils hours of work if I've tried to overwrite the previous file.

I've tried moving my second drive further from the monitor, but it doesn't help. Could it be something to do with the fact that I usually save only when *D-Paint* runs out of memory? I only have 1Mb.

On a different subject, when using Basic and other programs, I get NTSC sized screens, but when I reboot the screen returns to normal. Why?
Johan Ronnblom, Skellettea, Sweden.

If your animations are very large, it could be that you simply can't fit them onto the disk, and this is causing the problem. You indicated that you're overwriting the previous file each time, and I would have thought that you should stop doing that immediately if you're having problems. Try saving your files on separate blank disks.

Of course, it's always possible that your disks have simply worn out, either through constant use, or because they were not of a particularly good quality in the first place. If this is the case, try using new disks for your work.

Although you haven't said so, it sounds as if your computer is actually crashing when you try to save. If it isn't you can always go to the Workbench screen from *D-Paint* and format a fresh disk to save onto. You should also be able to return to the main program after getting a read/write error by clicking 'Cancel' in the error requester.

As for your experiences with NTSC and Pal screen sizes, some Amigas have switching hardware built into them, although I don't have a clue why yours should be doing so without you asking it to. Software can be written using NTSC screen resolutions, so are you sure that what you're using wasn't intended for an American machine?

There are a number of public domain screen switchers available, so you might like to get one from the company of your choice. Provided the guilty programs all load from Workbench, you should be able to switch the screen display back once the programs have loaded.

ERRANT AMIGA

I've recently purchased a second-hand Amiga 500. A friend who knows the previous owner told me that he spilt something on it. He tried to fix the machine himself by opening it and fiddling with the disk drive, but my friend said that after that incident, the previous owner's games developed viruses and wouldn't work any more.

I read in a recent issue of Q&A that somebody's Caps Lock light kept flashing. When I switch my Amiga on, the Caps Lock light flashes for about a second. In your reply, you said that a faulty Caps Lock light could cause a 'keyboard lock up'.

I mention this because I've tried to load *Wings* and *Microprose Grand Prix*, and my Amiga won't let me type in the password codes. If I need to get my machine fixed, where do I send it, and how much will it cost?
Stephen Broome, Stony Stratford, Milton Keynes

There is no physical damage that you can do to an Amiga which will make it more vulnerable to viruses, because they're software based and have nothing to do with the condition of your computer. The fact that the previous owner fiddled around with the disk drive leads me to think that either the heads were damaged by whatever liquid he spilt onto the computer, or that they were already deteriorating.

It's quite possible that he has worsened the situation by fiddling because the drives are not something that users should attempt to fix unless they know what they're doing.

So far as I can see, there are three possibilities: 1. The drive heads are dirty, either as a result of spilling liquid onto them, or simply through natural wear and tear. If this is the case, a head cleaner may rectify the problem. You can buy these for a couple of pounds from most computer shops.

2. The heads have become misaligned. You can buy alignment kits, but unless you're experienced, I suggest you get an expert to do the job for you.

3. Some other part of the input/output (I/O) circuitry has been damaged by the liquid. In this case you'll definitely need to get your computer looked at.

In reference to the flashing Caps Lock light, it's supposed to flash briefly when you turn the computer on. The type of problems that we were discussing earlier all result in the light continuing to flash for the whole time that the computer is switched on. I shouldn't worry about this. As for you being unable to type, the only suggestion that I have is that you haven't selected the text requesters before typing. Move the pointer into the requester where you have to enter the text, then press the left mouse button. You should now be able to type as normal.

Amiga repairs are causing a bit of trouble at the moment. Commodore's previous authorised repair centre closed down, and main frame veterans Wang were commissioned to replace them. It's too early to assess how good a job they'll make of it, so in the meantime I suggest you scan the small ads in any magazine. Repair companies constantly advertise. Just choose the one that's cheapest or closest to you.

Replacing a disk drive can cost you up to £100, depending on where you have the work done. Most other repairs come in at between £40 and £60.

SULKY STAR

I own a Star LC200 colour printer which works perfectly until I try to use it with Escape codes in Amiga Basic. I am currently using the Epson X[CBM-MPS-1250] printer driver with it. I have tried nearly every command and only a few actually work. I have noticed that the ones that don't work are the ones that start with <ESC> / CHR$(27). For example:

ASCII	DECIMAL	WHAT YOU TYPE
<SI>	15	LPRINT CHR$(15) This works!
<ESC> <SI>	27 15	LPRINT CHR$(27); CHR$(15) Doesn't work!

In the above example, both commands supposedly turn condensed mode on. Please can you help?

Darren Sunley, Roker, Sunderland

Although it would seem that the answer to your problem is straightforward, the fact that two-digit Escape codes are the ones that don't work the most frequently makes me wonder...

In the first line of your example, you have used what is known as a 'Basic Control Code' to activate condensed (17CPI) printing. The mnemonic for this is simply SI, or 15 in decimal. In the second example, you then try to give the same decimal number preceded by the decimal equivalent of an Escape Code. Although I don't know the full Control Code listing for the Star LC200, I'm 99% certain that there's no such code, or indeed any escape Sequence Codes that use a value of less than 32 in the second position.

What I'm getting at is the fact that you're mixing two different types of code; there's no such instruction as ESC SI, SI is an instruction all on its own. Whilst it's true that Escape Codes usually consist of two or three sets of digits (when converted into decimal as you are doing) a more usual example would be;

MNEMONIC	DECIMAL	WHAT YOU TYPE
INESC - 1	27 45 1	LPRINT CHR$(27); CHR$(45);CHR$(1)
ESC - 0	27 45 0	LPRINT CHR$(27); CHR$(45);CHR$(0)

The above instructions are often used to turn underlining on and off respectively.

Unfortunately the Control Codes required to perform different operations vary from printer to printer, so you should check the exact requirements in the appropriate section of your printer's manual. Remember, you can't mix and match instruction types. You must stick to decimal or Mnemonic codes, and you can't mix Basic Control Codes with Escape Sequence Codes.

SMART 600?

EXPANSIONS

I'm interested in the A600 smart card slot. Does it enable the user to use cartridge games specially designed for the 600? If so, will any hardware producers release an external smart card slot for the thousands of A500 and A500+ owners? Will any software houses be interested in producing cartridge style games for the slot as a way to beat piracy?

Jeff Cronkshaw, Catterline, Kincardineshire

The smart card (PCMCIA to give it its formal title) slot on the A600 promises to revolutionise the way we use and think of our Amiga. Sure, it can be used for loading games stored on credit card sized bits of plastic, but its implications are far more widespread. For example, how about a 50 meg RAM card, giving you the equivalent of a hard drive? Or the entire contents of the Fred Fish library on just one or two cards?

As I mentioned earlier, developers are already working on bringing the smart card slot to the A500 and 500+. Watch this space for further details.

Of course, it will be a good way to reduce piracy. Casual copying will be eradicated, and even the boot sale pirates will have to look elsewhere for a fast buck. Only professional pirates with access to serious duplication hardware will still be able to operate.

Strangely enough, according to Kelly Sumner, Commodore's new UK MD, the company prefers to steer its future towards CD technology such as that found on the CDTV and the A570 CD ROM drive. The trouble is, apparently it takes three months to duplicate cartridge software, but only 48 hours to duplicate CDs. Of course to the professionals, CDs are easier to pirate...

COMMERCIAL PRINTING

I have been having problems with printing. Not with my Canon BJ-10ex bubble jet, but with the Printers. You know, the people you go to to get leaflets, etc, produced in vast quantities.

I do a lot of design work on my Amiga as I find it very easy to use. When I take my print outs to the printers, they have problems printing shades because the camera can't pick up each individual dot. They tell me that if I buy a PC or MAC, they can do it from their computer (a PC running *Page Maker*). I use *Pro Draw 2.0* and I was wondering if it is possible to get an Amiga DOS disk to load on their machine, and if so how? The only way that I can think of, is using one of these DOS2DOS programs, or is it possible to do it with MultiDOS?

New York Design Studio, Sheffield

I've experienced exactly the same problems when sending Pro Page documents that have been output on my bubble jet printer. The grey shades end up looking blotchy, and the entire effect is lost. Although I've never got around to doing it, both Mac and PC based DTP/Printing bureaus are capable of importing Postscript documents. The trouble is, finding out exactly what Postscript settings they require. I suggest that you have a long chat with your printer and find out exactly what settings his machine requires/will accept. Then it's (hopefully) just a matter of using the Postscript save option from Pro Page, and putting the file onto a PC disk.

To get your files onto a PC disk, all you'll need is a blank PC formatted disk and a copy of Messy SID or some similar PD utility. If you decide to use MultiDOS or DOS2DOS, ensure that you simply transfer the file without any conversion processes being applied to it.

Alternatively, I believe there are bureaus which will print work produced and saved on AmigaDOS disks, although I don't know any addresses.

Do any readers know more about this subject?

SCREWY SCREEN

The other day I was using my Amiga and I noticed that the screen display was too high (by as much as two inches on occasions), and slightly too far to the right. This is not so bad playing games, but when I need to pull down menus it's a real nightmare!

Is there a screw or something that I can turn to straighten the display up? I'm using an ordinary TV with a modulator.

Richard Ingman, Newton Aycliffe, Co Durham

Most TVs have both both vertical and horizontal adjustment dials at the back so these may help. Another alternative is to realign the screen from Workbench, although you will need to do this for every program you run. Simply open preferences and move the screen display gadget until you're satisfied.

There are some Amiga screen modes which can place parts of the display completely out of sight. Overscan and severe overscan (sometimes called maximum overscan) will certainly do this. If you're working in an art package such as *DPaint*, check that you're not in these modes.

MATH NOTATION

Is there any software available, preferably PD or very cheap, that can cope with mathematica; notation and symbols for putting maths notes onto disk? None of the word processors I've seen have this facility.

Edward Wilson, Newington, Edinburgh

It depends on the level of mathematical notation you need to input. There is an Amiga font called Symbol which contains a lot of mathematical symbols such as Pi, Radians, Theta and so on. However, if you're doing more advanced stuff this may not be adequate.

As I understand it, the problem with mathematical notation is not one of finding a suitable font, but rather of finding a package that will lay them out professionally. You could, of course, try loading the font into a word processor such as *Wordworth* or *Penpal*. If you have any DTP packages, there are Type 1 and Compugraphic versions of the Symbol font available for them too.

If you ever become very rich, you may be interested to learn about a professional mathematical typesetting program called *AmigaTex*. If memory serves, it costs at least a couple of hundred pounds and has been designed by and for graduate level mathematicians.

That's all the questions we've got room for this issue, but we'll be back again next month, same place, same colour paper! Address any queries you might have to: Q&A, CU Amiga, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. While we'll try and answer as many questions as we can in these pages, it's not possible to send written replies, even if you do include an SAE. Sorry.

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SOUND CHECK

Mat Broomfield continues his extensive *OctaMed Pro* tutorial. This month he shows you how to enter sheet music.

OCTAMED

PART 4

5000 YEARS OLD AND GOING STRONG!

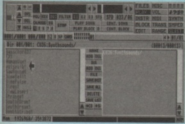
Even if you have no musical talent, you can still make music with *OctaMed Pro*. All you need is some sheet music and a bit of time. Although much computer music nowadays is entered using numbers and letters, more conventional forms of musical notation have been in use since as early as the year 3000 BC. The current system of bars, notes and staves is often referred to as 'traditional notation'. In actual fact, traditional notation originated in the 11th century AD, and was not refined into its present form until the sixteenth century. Nevertheless, it remains one of the most descriptive and expressive ways of representing music, and has become the universally accepted language for recording musical ideas on paper.

Traditional notation is very simple to understand. Although there are hundreds of rules, words and symbols available, only a minute percentage of them are needed to create music.

MY NAME IS BOND... JAMES BOND

The best way to learn is by doing it for yourself, so let's get on with a piece of music. I've chosen the opening two bars from the James Bond theme, which I've selected because the tune is both simple and easily recognisable.

Before we can enter any notes you're going to have to load an instrument and you should know how to do that by now, so load 'pulsevib1' from the Synthsounds directory on the *OctaMed Pro* disk we gave you back in July. Now click on the notation icon in the options palette (it's the second one from the top on the right-hand side).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SAVE ALL
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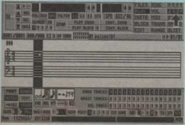
SAVE LIST
Mem 1926960/ 3513872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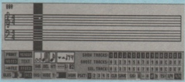
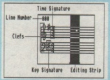
CONT. BLOCK
01 pulsevib1
000
PRINT
NOTES
TEXT
SHOW TRACKS
GHOST TRACKS
SEL. TRACK
Mem 1925464/ 3513280

THE BAR EDITOR

The notation window should now fill the main part of the screen. The white bar editor runs from left to right across this window, and it contains an empty bar ready for you to enter some music. At the top left of this window, you'll see the number 000, which is the equivalent line number in the main editing window to the first note in the bar.

Immediately beneath the line number, there are two sets of staves (five lines each). Each line and space in the stave represents a note. At the start of the top stave, you can see a curly symbol. This is called the treble clef, and if you look closely, you'll see that it loops around the second line of the staff (staff and stave mean the same thing incidentally). The treble clef always loops around the note G (above middle C), and it denotes the pitch of all notes placed on the staff in which it appears. The lower stave starts with a figure that looks like an incomplete number '9' with two dots after it. It's called the bass clef, and in this case, the two dots always straddle the note F (below middle C). It also denotes the pitch of any notes placed upon its stave. If you know your music theory, you will know that the lines on the treble clef (starting with the bottom line), are equivalent to the notes E, G, B, D, F, whilst the ones on the bass clef are equal to the notes G, B, D, F, A. For now, suffice it to say that notes placed on the bass clef will sound lower in pitch than those placed on the treble clef. In addition to the notes that fall on lines and spaces, there are extra ones known as sharps and flats. On a piano keyboard, these are the black keys. You can think of sharp and flat notes as modified versions of the normal notes. In music notation, they are indicated by placing a small sharp or flat symbol in front of the note to be played.


000
SHOW TRACKS
GHOST TRACKS
SEL. TRACK

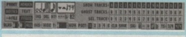

Time Signature
Line Number
000
Clefs
Key Signature
Editing Strip

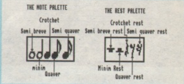
After the clefs, you'll see the number 4/4, and this is called the time signature. It's used to specify the number of beats per bar.

After the time signature, you will see a thick black vertical bar. This is the editing strip, and it shows you where any notes will be placed when you enter them. You can move it both left and right using the cursor keys.

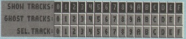
THE CONTROL ICONS

Below the bar editor, there are loads of icons which let you perform different actions. There are five notes and five rests available to you, from a semi-quaver to a semi-breve. The shape of the note indicates how long it will play for, with each one lasting twice as long as the one to its right. A semi-quaver is the shortest note, being equivalent to one line of music in the main editing window.


PRINT
NOTES
TEXT
SHOW TRACKS
GHOST TRACKS
SEL. TRACK


THE NOTE PALETTE
Crotchet
Semi breve
Semi quaver
minim
Quaver
THE REST PALETTE
Crotchet rest
Semi breve rest
Semi quaver rest
Minim Rest
Quaver rest

At the right of the notation window, there are three sets of track controllers, labelled 'Show Tracks', 'Ghost Tracks' and 'Sel. Track'. These are used to specify the type and amount of information that you will be shown in the bar editor as you create your song. Beside each label, there are 16 boxes, hexadecimally numbered 0-F, and these represent each of the tracks that you may choose to view or edit. By default, all 16 possible tracks are shown simultaneously in the bar editor. Apart from the fact that most songs can only use four or eight tracks (unless you're using MIDI), you'll soon realise that having that many tracks on display can be awfully confusing. In this case, you have two options: you can either turn a track off entirely, by clicking on its number in the 'Show Tracks' or 'Ghost tracks' display, or you can ghost it. Ghosting means that whilst the notes in the selected track will still be visible, they will be pale


SHOW TRACKS: 0 1 2 3 4 5 6 7 8 9 A B C D E F
GHOST TRACKS: 0 1 2 3 4 5 6 7 8 9 A B C D E F
SEL. TRACK: 0 1 2 3 4 5 6 7 8 9 A B C D E F

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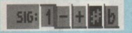
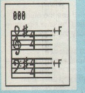
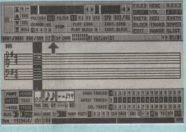
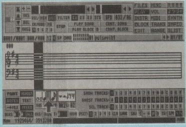
grey, and thus much less intrusive. The bottom row (Select Track) is used to choose the track that you want to work on, so click '0'. Underneath the Select Track gadget, you'll see a small gadget labelled Sig:. Beside this gadget, there is a number 0, minus and plus symbols and sharp and flat symbols. Ensure that the sharp symbol is selected (it looks like a wonky hash sign [#]), then click on the plus symbol. As you do so, the number 0 should change to a 1, and in the bar editor you should see two sharp symbols appear just in front of the time signatures. We have just set the key signature for our tune. If you look closely at the sharp symbols, you'll notice that both straddle the note F. This means that unless otherwise specified, every time the note F is played, it should be sharpened (played one semi-tone higher). This has the same effect as printing a sharp symbol in front of every single occurrence of the note F.

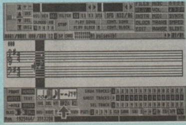






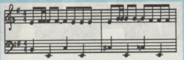
Turn editing on by clicking the letter E in the major status bar, then go to the note palette and select a quaver (the second note from the right).





Your cursor should change into a quaver. Now place your cursor anywhere inside the editing strip in the bar editor. Press the left mouse button and, keeping it pressed, move your cursor up and down over the staves. If you look underneath the left-hand end of the rest palette, you should see the name of the current note changing as you move the cursor. When you've finished checking out the way that the notes work, move the note outside the black editing bar and release the mouse button.

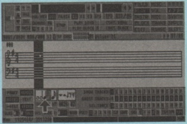
Now look at the short piece of music listed below:

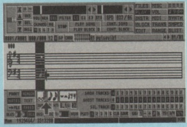


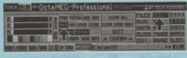
You'll see that it is split into a bass and melody part; the bass is, of course, represented by the notes on the bass staff, whilst the melody is represented by the notes on the treble staff.

THE BASS

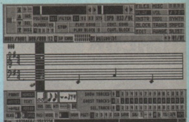
We'll start with the bass staff because that's the easiest. Select a crotchet from the note palette and move the cursor into the editing strip. Holding the left button down, slide the cursor up and down until you see the note B-1 selected. (Please note that B may be shown as H in your version of *OctaMed*. If this is the case, click Misc in the options palette, then in the window that opens click H→B.)



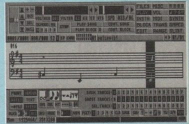




When B-1 appears, release the mouse button, and voilà, our first note is positioned! Notice that the editing strip moves along the bar ready for the next note. Now enter the next three notes in the same way. Remember to insert the notes in the editing strip. Unless otherwise told, every note that you enter should be in the key signature specified at the start of the song. In this case, only the note F should be sharpened. As you enter the fourth note, you'll see that the current bar is moved out of sight and a blank new one has replaced it.



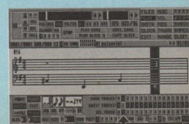
Now look at the music again. Notice that the first note in the second bar has a sharp symbol in front of it (the note is C sharp). This is known as an accidental. Accidentals are any notes which do not fit within the current key signature. Enter the first two notes of this bar (C sharp, E). If you now look at the third note in the bar, you'll notice that it's preceded by a new symbol, called a natural. As you've probably guessed, the natural symbol means play the note without sharpening or flattening it. Now you might be asking why the note of C needs a natural symbol in front of it, when C is natural in the current key signature anyway? The answer is quite simple; remember that sharpened C at the beginning of the bar? The sharp symbol does more than simply sharpen a single note, it affects every other C past that point, until the end of the bar, and this is the reason why the second C had to be naturalised. Bearing this in mind, enter the remaining two notes in the bass staff.

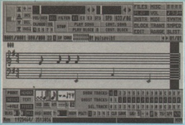


Okay, so that's the bass staff entered. You can listen to the tune if you like. When you've heard enough (it shouldn't take long!), move the editing strip right back to the beginning of our tune so that it's on the first note (line number 000 should be visible in the top left corner of the bar editor). We're ready to enter the melody of our tune now.

THE MELODY

Activate track 1 by clicking on the Sel. Track: 1 gadget. As you click on the number 1, number 0 will be de-selected. Notice that the bass track is now ghosted. Looking at the first few notes of the melody, you'll see that they consist of different symbols to the crotchets we've been using so far. However, they shouldn't cause you a problem because they are all available in the note palette. Enter the first four notes in exactly the same way

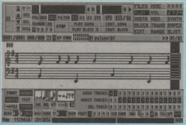


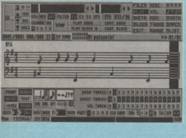


as you did when you were entering the bass. Remember that every occurence of the note F should be sharpened. As you enter the notes, you'll see that the editing strip doesn't move as far as it did when you were entering crotchets. This is because the editing strip moves in relation to the duration of the note you're entering. In other words, if you enter a long note, the editing strip will move a long way, and if you enter a shorter note, it won't move as far.

If you look at the fifth and sixth notes in the treble clef (two quaver F sharps), you'll notice that they're joined together by a curved line. This is called a tie, and it indicates that you need to play the two notes as if they were only one longer note. Look at the note palette and you'll see that a crotchet is twice as long as a quaver (it's situated to the quaver's left). In this case, because we have to play two quavers as one note, it's actually easier to enter a single crotchet instead. Bearing that in mind, you should now be able to finish both bars of the melody.

When you've finished them, the bars should look like this:

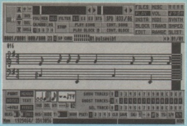




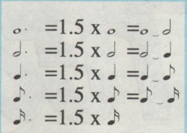
TO RECAP

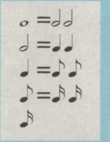
Let's round off by reviewing a few basic rules of music notation.

Staffs/Staves – The staff consists of five parallel lines. Notes can be placed on the lines or the spaces between them. The lines and spaces of a staff have no specific pitch until a clef is placed upon them. The two most commonly used clefs are the bass clef (sometimes known as the F clef), and the treble clef (sometimes known as a G clef). When a treble clef is placed on a staff, the lines of the staff (reading from bottom to top) represent the following notes: E, G, B, D and F. When a bass clef is placed upon a staff, the lines represent the notes G, B, D, F and A.



Notes – Notes are represented by a series of symbols which primarily describe duration. These symbols only take on a specific pitch when placed on a staff that also contains a clef. There are six basic note durations: semi breve (longest), minim, crotchet, quaver, semi-quaver, demi-semi-quaver. Most modern music doesn't use demi-semi-quavers, and *OctaMed* doesn't support them. Each note is worth half as much or double the value of the next highest or lowest one in the sequence. Sometimes notes have a dot after them, this increases their duration by 50 percent, i.e. a dotted quaver is worth one and a half times the duration of an undotted one. If another dot is added, this increases the duration of the note by 75 percent. In theory you can add dots infinitely (i.e. three dots = 87.5% , etc) but in practice it's rare to see a note with two dots and incredibly rare to see one with three.





Sometimes, two notes of equal pitch are joined together by a symbol known as a tie. When this occurs, the notes are played as one, with the duration being equal to the combined duration of both notes. There is no limit to the number of notes which may be tied together, but it's generally more practical to simply use a note of longer duration when lots of smaller notes would otherwise be tied together.

If two notes of unequal pitch appear to be tied together, it's called a slur. When this happens, you should try to slide smoothly from one note to the other, without a definite pause between the two. You can use *OctaMed*'s slide feature to help with this.

If you are interested in finding out more about musical notation, The Associated Board of the Royal Schools of Music publish an excellent reference book called 'Rudiments and Theory of Music'. It contains music theory topics ranging from the names and durations of notes right up to analysis of harmonic progression.

Although it's designed to be used in conjunction with formal music tuition, it makes a handy dictionary of musical terms and notation. Better yet, it only costs about £2.00 and should be available from all good music shops.

OOOPS!

In the August tutorial, I talked about how to create your own instruments list, and how to save it so that the list is automatically present whenever you reload the program. Sorry to say that I made a really dumb mistake which means that it didn't work as it was supposed to.

Here's the correct version. Follow the instructions for making your own instruments list until you reach stage 6 where I told you to unprotect your original Octamed disk. Now, instead of simply clicking S, you should obviously insert the unprotected *OctaMed* program disk into the internal drive.

Now click *Files* in the Options palette. When the Files window appears, click on the letters DF0: at the right of the window. The contents of your OctaMED program disk will now be displayed.Return to the Sample List by clicking SLIST in the Options palette, and NOW you can click S under the words Save List. This should hopefully sort the problem out, although if you want to be absolutely certain, you can also click CD under the words Save List. This will now save a sample list in the current directory (as well as the S directory). Sorry to anyone who's been pulling their hair out over my stupidity; it was late and I was tired, what can I say?

FURTHER READING

If you're having any trouble getting to grips with this superb program, you might be interested to know that Amiganuts United publish a manual for it. In fact the manual was designed around the previous version of the program, but all of the important points are covered. Amiganuts have also released a disk of *OctaMED* tunes which you can disect to see how the pros do it. Of course, you can also 'borrow' the samples from these songs if you like. The manual costs £10.00 and the disk costs £3. You can order either of them by writing to Amiganuts United, 169 Dale Valley Road, Hollybrook, Southampton, SO1 6QX.

Ardent musicians will doubtless be pleased to learn that there is a dedicated Amiga disk magazine specially for them. See the AM/FM review in this month's PD Utilities for further details.

NEXT MONTH

Next month we'll be taking a look at the Sampler section of *OctaMED* to see how you can record and edit your own samples. Needless to say, you will need a hardware sampler such as Technosound, Master Sound, AMAS or similar.

get real!

If you want to jazz up your samples with some realtime effects or merely want to add some reverb or echo, then Tony Horgan is here to tell you how it's done on the cheap...

IN FULL EFFECT

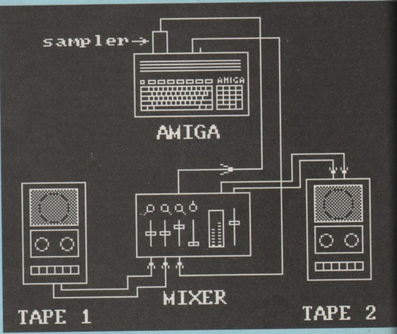
Whether it be in wildlife documentaries, rock anthems, techno 12"s, radio jingles or film scores, digital effects are everywhere, especially now that digital signal processors are relatively cheap. Oops, there's that word again: relatively. That means cheaper than before, but still expensive enough to leave a hefty crater in your bank balance. Don't despair, though, we'll soon have you reverberating into the small hours, without having to spend a penny (remember, CU Amiga is always first for bladder-control tips) .

THE EASY ROUTE

The obvious place to start is the EFFECTS menu of your sampling software. As well as the essential volume fade feature, any sampling package worth its salt should have at least another two effects on offer. Echoes and phasers are the most common, and getting the hang of these is just a matter of experimentation. You can't really go wrong with them in most situations, but there are occasions when you should use them with care.

Echoes on drum loops can be very effective, but they can also be disastrous. The thing to remember here is to keep the echoes in time with the beat, otherwise you'll end up with an awful mess of bangs and crashes. Phased loops can spruce up a soundtrack, but if you just phase the whole sample in one go, you'll get an audible jump when you loop back to the start. To get the phase running smoothly, affect the first half of your sample, then reverse the phase settings (invert the flange depth and length values) and affect the second half of the sound.

Maybe you fancy a different kind of echo effect.



Realtime effects can be produced by your Amiga at the mixdown stage. It is likely that you will only want to process some of the sounds on the tape, so it's best to separate all of these into one half of the stereo image and use the setup as shown above.

How about an echo that leads into the sound, rather than out of it? It's extremely easy to do. All you do is reverse the sample before you echo it. Then turn the sample back round the right way, and now your sample fades in from the front with a kind of crescendo effect.

MANUAL PHASING

If you don't have a phaser function available, you can still come up with the same effect using the mix option. Copy the sample, then highlight the wave from just after the start, right to the end. Now mix the copy of the sample back onto the original. This combines two identical sounds into one, with a slight delay on the second sound. If you've done it right, you'll get a phaser effect. If you put too much delay on the second sound, you'll get an echo. The length of the gap that you put between the two depends on the rate of your sample. Samples at higher rates need a bigger delay, and vice versa.

By altering the delay (or phase controls), you can produce a series of samples, each of which is phased slightly more or less than the next. This can be particularly handy for drum sounds. You can then sequence your sounds in order so that you get a smooth wash across your high hat line, for example.

REVERB

Strangely enough, I can't remember coming across a sampler that can put reverb on a sample. Reverb (or reverberation to give it its full name) is similar to an echo, but more subtle, giving the impression that the sound is being played in a large hall or church. It's used on just about every song you'll hear on the radio, mainly on vocals, and also on drum sounds in ambient house tunes and slushy ballards. Alternatively you can use a bit of reverb to smooth out an abrupt end to a sample.

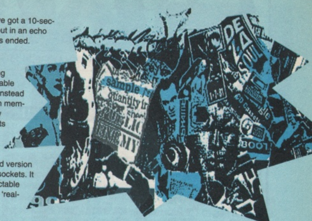
Even though we haven't got a reverb function, we can recreate it with a simple cut and paste job. Copy the end portion of the sample, add some workspace after the sample to make room for the reverb, and paste the part you copied onto the end of the sample. Now zoom in and highlight the section you've just pasted down, and change its volume to about 20% of maximum. Primitive as it may seem, it works extremely well.

TRACKER FX

So far, we've just been working with the sample editor. Once you get into MED or Protracker, a whole new array of options open up.

The trouble with putting echoes and reverb on the samples themselves is that the affected samples are bigger and so take up more memory. This isn't a problem if you only have a short echo, but if you want a good long one you could end up with a sample two or three times the size of the original. The alternative is to simulate the effect in your sequencer.

With some sounds, you can get away with using a single track. At the point where the sound ends, cue it again, but at about 20% of the original volume for reverb effects. While this works for most short instrument sounds, you might have to alter the technique somewhat for longer samples. In this case, you'll need a spare track on which you can cue your echo (the same sound played more quietly). That way, if you've got a 10-second sample you can still put in an echo before the main sound has ended.



REALTIME FX

These days, most sampling software offers a considerable range of realtime effects. Instead of manipulating samples in memory, the computer can now mimic a professional effects processor, listening to the incoming sound through the sampler cartridge, and sending out its affected version through the stereo phono sockets. It does this without any detectable delay, resulting in the term 'realtime' fx.

For standard game or demo tunes, this isn't of any use, as you can't run the effects at the same time as a sequencer, unless you use two Amigas. However, if you plan to record your music, you can make use of the effects at the mixdown stage. Apart from multiple cables, you'll need either a four-track tape recorder or two standard stereo tape recorders and a mixer.

Begin by recording your tune. If you're using a couple of normal tape decks, boost the signal a bit by passing the Amiga's output through the mixer, then onto the tape deck. Make sure you keep the left channel panned right over to the left, and vice versa. For four-track cassette users, I'd recommend recording first onto tracks three and four, keeping the left and right channels in their original pan positions.

SONIC STROBING

One of my favourite effects is strobing. It works well with most long or looped samples, and when used on a sound out on its own without any accompaniment, scores very high on the 'In your face-o-meter'.

Alternate the volume on each line between 64 (maximum) and 0. Then put your sample on the same track, and hit play. For even funkier results, double the tempo, so the sound strobes twice as quickly. For a similar effect, instead of turning the volume on and off, strobe the low-pass filter by switching between FF8 and FF9 in the command column if you're using MED. Your choice of tracker may use a different command for the filter control, so check with the documentation.

Once you've recorded the piece, load up your sampler software. Choose the effect you want, and tailor it to suit your needs. Now connect the 'effect send' output on your four-track to the sampler cartridge. Route tracks three and four to the input paths for tracks one and two, via the effect send. Then connect the Amiga's stereo output to the 'aux recieve' inputs on the four-track. You should now be able to record tracks three and four over to one and two, bringing in the effect as required with the AUX receive controls.

For those with a couple of tape decks and a mixer, the theory is just the same. Get your sampler/effects software running and connect the output from your first tape deck to the mixer. It's most likely that you'll only want to put an effect over certain sounds, but not others. Maybe you've got a section with a drum beat and bassline, but you only want to phase the drums. In this case, make sure the drums are on a different channel to the bass so that you can separate the two by panning the left and right outputs to opposite sides. To keep things as simple as possible, put all your sounds you want processed on the same side of the stereo image.

Let's say you want to put effects on sounds in the left pan position. Connect the left Tape Out of the mixer to the sampler cartridge. Then hook up one of the Amiga's stereo outputs to the mixer, and pan that incoming signal to the right, to avoid what would become a very noisy feedback loop. Connect the main stereo output from the mixer to your second tape deck. It might be a good idea to merge the signal here into mono with a Y adaptor.

Begin with the fader that controls the Amiga's output volume pushed right down to zero. Play the original mix from your first tape deck, and get the feel of bringing in the effects by raising the fader. When you've rehearsed it a few times, wind back to the start, hit record on the second deck, play the first, and away you go.

NEXT MONTH **Our musical maestro, Tony Horgan, continues his look at the musical capabilities of the Amiga and helps you get the most out of your machine.**

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NEXT MONTH

big changes ARE COMING TO CU AMIGA

C...C...C...CHANGES (PART 2)

That's right. From the very next issue of CU Amiga, we're going to introduce a significant new section to the magazine. In fact, were adding an entirely new 32-page pull-out at absolutely no extra cost. How can we do this? It's simple really. Our new ABC figure of 101,923 copies sold each month means we are making more money than ever before. Not wanting to take the money and run, as some other magazines might do, we've decided to invest in CU Amiga's future and give our loyal readers more pages for their money.

So, starting with our November issue, you'll find an Amiga supplement tucked inside the magazine. Each month we'll be taking a look at a specific area of the Amiga, such as PD software, games, programming, graphics and music, and building up one of the most comprehensive guides to the Amiga ever published. Forget forking out £20 for an Amiga guide, all you have to do is buy CU Amiga ever month to get the most authoritative guides available.

The first such guide will take an in-depth look at all things PD. What is the Public Domain? Find out next month as we review and rate the top 100 PD games and all the best graphic, animation and music packages available at a fraction of commercial software prices. We'll also be interviewing some of the top teams from around Europe as well as providing a buyer's guide to the best Shareware and Licenseware offerings.

REMEMBER: This isn't a one-off promotion, we're going to be publishing these guides each and every month. In no time at all, you'll have built up the best guide to the Amiga ever published.

THE NEW AMIGA

As speculation mounts over the new range of Amigas that Commodore has waiting in the wings, we'll be adding to the furore with our own exclusive details of what this machine will be like. The future of the Amiga starts here...

GAMES CRAZY

As the Festive season approaches, more of the big games come in for review. Already, it looks likely we'll have a bumper number of titles for review in a specially extended gaming section choc full of all the latest previews, news and product tests.

VIDEO & GRAPHICS BONANZA

With the large number of high quality, high resolution graphics boards available, and the predominance of the Amiga in the field of desktop and professional video, we'll be taking a look at what hardware and software is available for everyone from the most humble and unworthy camcorder artist to the most affluent George Lucas wannabee.

READER REVIEWS

Starting next month we'll be giving YOU the chance to air your own views and opinions on the latest crop of productivity and games software. Just pop your thoughts down on paper following the general structure of our reviews, and who knows, you could have your work featured in our next issue. What's more, we'll even pay you for your efforts.

BUYER'S GUIDES

If you're wondering what to buy your Amiga-owning friends this Christmas, then read our Festive buyer's guide to find out what are our top-rated buys for Christmas. In the first part of a two part feature, we'll be taking a look at software and accessories that cost under £50!

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CU AMIGA – NOVEMBER ISSUE ON SALE 26TH OCTOBER

where are they now?

As the march of the consoles continues, it's not only the Amiga that's under threat. What about the programming talent of the future? Archer Maclean sounds worried.

THE GOOD OLD DAYS

Where is the next breed of programmers coming from? I started in the early days of the Atari 400/600/800, and I can clearly remember when you could whack in a cartridge, switch a machine on and you could start programming straight away, but what have you got now? Look at the Amiga – a fine machine but near impossible to get into. What worries me is what happens when the consoles really take over. You can't program a Megadrive because it hasn't got a keyboard or a programming language. Besides which, you need a two thousand pound IBM PC and another three for a Snasm system. There aren't many bedroom programmers who can afford that kind of dosh.

At the moment, let's say a software house receives thousands of disks a year in the post from budding programmers, complete with a note saying 'Hey, here's a great version of *Pac Man* I wrote in two weeks. Will you publish it?'. Okay, most of them will be poor, but occasionally someone comes onto the scene who shows great promise. Apart from the main teams, there are about a dozen solo programmers around – Geoff Crammond, David Braben and Andrew Braybrook to name three – and all of these people started in the same way. With Japan ever rolling forward, you can't help but worry.

AN ALTERNATIVE FUTURE

I don't see the Amiga dying for quite a long time yet. People may say now that it isn't going to last, but they said that about the C64 five years ago, and companies can still make a lot of money from selling C64 titles. No, I can see the IBM PC finally becoming a viable machine over here, within 12 months even, and before long you'll have a wide age range of PC users at one end of the market using CD drives and everything else that the PC has to offer, and an unbreakable console force at the other. The Amiga will sit somewhere slap-bang in the middle.

However, the majority of young budding coders will have their feet under the console coffee table, and until someone like my good self, a purveyor of fine quality software (if you don't mind a quick plug?!) comes along with a keyboard and a programming language for their machines, the new breed of programmers will die out.

THE AMIGA AND ITS CURRENT COMPETITION

As I've already said, the PC will finally become the true force in home computers, and not before time. As prices come down, more and more people are finding it easier to get the cash together for one of these gamer's dreams. Take *Pool* for example. On the Amiga, it would be near impossible to display the balls rolling properly. If you consider that there are 88 different sizes of ball, and that the ball can roll completely in every direction, the time it would take to generate the position of the numbers on each of the balls would render the game unplayable. If you imagine a ball being 10 pixels high on screen, the number four on one side would look a mess. However, on a fast PC that shouldn't be too much of a problem, and I'm considering implementing that.

Now that the Atari ST is finally in its death throws, Atari are fighting back with the Falcon 030. I would love to see it succeed, as you rarely get such a powerful machine at such a competitive price, but I can't see that many current owners suddenly switching to a new machine with the exception of some die hard ST fanatics.

I really hope that they can get their marketing campaign together for once. And perhaps even commision an expensive but utterly amazing piece of demo software. After all I am only in this business because in '79 I saw *Star Raiders* on the Atari 400/800 series. That was so absolutely amazing I just had to fork out 800 pounds to buy an Atari just to play the game. Atari now need to have the foresight to commision such an impacting project before it's too late. If the Falcon has thrown down the gauntlet to Commodore, then maybe they should bring out a 68040 machine (the Eagle?) and herald in a new Amiga range to compete with the best that the PC and consoles can offer. ⚭

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